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OFF THE PAGE, ON THE PAGE, AND INTO THE CYBERSPACE SCREEN:

bringing together liminal states and the pedagogy of bricolage on virtualized landscapes

BY

Carrol Duane Burton ©

A thesis submitted to the Faculty of Graduate Studies and Research

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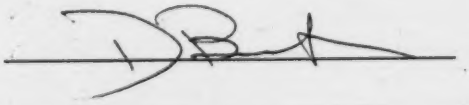

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FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled **Off the Page, On the Page, and Into the Cyberspace Screen: bringing together liminal states and the pedagogy of bricolage on virtualized landscapes**, submitted by Carrol Duane Burton in partial fulfillment of the requirements for the degree of Master of Education in International/Intercultural Education.

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DEDICATION

For Dawn

ABSTRACT

This thesis is interested in changes in digital communications technology and its impact on social and educational landscapes. In particular, it is interested in digital technology's capacity to virtualize reality, to reframe and transform social and educational landscapes into cyberspaces.

Does the virtualized landscape involve a different pedagogy, or mode of consciousness in turn requiring a form of literacy other than Western traditional literacy? Interestingly enough, virtualized cultural, social and educational landscapes are familiar liminal states in the Native Oral Tradition.

Using the new language of digital technology we are conceptualizing our world, teaching our world, telling our stories, and learning of our world and each other. Is it a better way of knowing? Regardless, Western culture is immersing itself in digital technology. In the process it is changing the traditional narrative on social and educational landscapes. Both the emerging and submerged narratives are worth looking for, and listening to.

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FORWARD

The Researcher

> A journalist is a grumbler, a censurer, a giver of advice, a regent of sovereigns, a tutor of nations. Four hostile newspapers are more to be feared than a thousand bayonets. (Napoleon Bonaparte, 1815; as cited in Maher & Tetreault, 1994, p. 1)

I have a sustained interested in communications technology and the power of mass media in relationship to its influence on policy, its impact in relationship to collective group processes, individual processes, and in observing the media mediating the construction of social reality-- what should be, could be, must be. Contemporary Western culture's traditional social reality is now changing with electronic digital text. Now we must consider what is real, 'realer', and 'realest.'

As a social work student I initially looked at the print media's influence on social policy as it related to social services. Yes, the news media involves buying and selling, but their tradition has been to uphold a public trust mandate to serve the community by honoring their right to balanced points of views. Positioned here, the media is the arbiter of social reality and provider of a public forum, a democratic institution. Here the media can exercise it power to influence policy for the common good. To serve citizens over markets is a weighty legacy for media makers. It is a problematic legacy in the new digital age, and I think it is essential to understand why.

Geographically I entered this exploration from within Western culture's "electric image culture." Biographically, I come from within Western culture and its literacy tradition. As such, I bring an emic, or insiders, perspective to the research. However, it was integral to the research exploration that I consider a traditional oral culture's perspective as I had made a connection between the way in which the Native oral tradition accessed information and how Western culture is accessing digital text. I found the Native oral tradition's central concept of liminality relevant and, in particular,

their idea and use of the liminal state of being. In looking at the Native traditional oral culture I relied heavily on the work of Allen (1983, 1995, 1996).

During the exploration I found it necessary to reconfigure language and look at new concepts. I began to think of literacy in terms of a 'techno-digital' literacy, the way we access information from the computer screen as 'bricolage' ("tinkering"), and with respect to how we now work with digital text as the 'pedagogy of bricolage.' The connections I made raised the question of whether or not Western culture's new digital technology was contextualizing a new learning process that involved not only a different mode of discourse, but also a new mode of consciousness. This was the change, and the question, I wanted to explore.

Labeling myself feminist does not mean that the research was conducted according to the principles of feminist methodology so much as having been informed by observing the media construction of gender. This observation revealed the 'hidden curriculum' of media construction throughout socially sanctioned realities, and the idea of not only emerging narratives but also the submerged narrative, and submerged narrat*or*. Poet and writer Rich (1993) writes,

> When those who have the power to name and to socially construct reality choose not to see you or hear you, whether you are dark-skinned, old, disabled, female, or speak with a different accent or dialect than theirs, when someone with the authority of a teacher, say, describes the world and you are not in it, there is a moment of psychic disequilibrium, as if you looked into a mirror and saw nothing. (p. 1)

In producing and editing video programs collaboratively with community groups, I became aware of the power ascribed by participants to both the visual images and the process involved in making and telling this form of story, and then again the power of the final program for viewers. Later, in developing a post-secondary media literacy unit I realized that there was a critical historical connection to be made, both socially and in personal mind-set, with forms of literacy's and the social construction of our ideas about the "making of childhood," motherhood, or any "-hood" for that

matter. I have come to think of media technology as a handmaiden to socially constructed roles and realities, and as major contributor to developing cultural context.

Western culture's move to digital text, to a completely different expressive form, took me past the conventional print, television and film media literacy I had been researching. By way of exploring digital text in cyberspace, that is, on virtualized landscapes involving a new aesthetic way of knowing without a familiar context, I formally participated in creating a multi-user virtual domain. This involved both the creative and technical process of constructing a personalized cyberspace personae in order to participate in cyberspace text and discourse on a virtualized landscape.

The experience of being caught up in an aesthetic and phenomenological process in cyberspace felt like a completely new way of knowing. There were many moments, to paraphrase Adrienne Rich, when 'they' were describing the world, and I was not in it. I could best describe this experience of culture shock as being in a process that went beyond a new mode of digitized discourse and into the realm of techno-digital literacy, and possibly a new mode of consciousness.

Those new to digital technology may find the learning curve requires a quantum leap. But the first generation of children that have grown up with computers is here. Digital techno-literacy has been incorporated almost before it has been recognized. I realize, again, that there has been no time for educators to really look at some of the possible truths and longer term consequences of this new communications and information technology.

I have assumed educator's want students to be able to critically read and analyze media text. I am now assuming educators will need to be interested in different ways of knowing and their modes of consciousness, and in particular, in digital text and this medium's literacy, its form of discourse and mode of consciousness.

CHAPTER ONE

Introduction

Canadian educator, media analyst, futurist, and cult intellectual, Marshall McLuhan (1964) believes that in order to render meaning from the message we must study the communication medium itself. His research compared inscribed print-based Western communications culture to "electric image-based" television culture. One of his most well-known contributions is the much quoted "the medium *is* message." Is meaning influenced by and therefore distinct from the medium, or is all meaning embedded therein? McLuhan thought of electronic technologies as an extension of human consciousness in *Understanding Media: The Extensions of Man.* He writes, "we shape our tools, and thereafter our tools shape us," and asked, "To what extent do the forms of human communication modify our sensory experience, psychic habits, social relationships and political ideas?" as cited in Techno-seers, 1996).

American educator, media analyst, and futurist, Neil Postman (1996) has made the statement that "new technology makes new kinds of people." He is referring here to the capacity of mass communication to impact culture in ways that change where members are positioned in relationship to themselves, each other, and the world. He believes that technology is not so much a science as a branch of moral philosophy. Television has been our "soma," and we have been "dumbing down" by "amusing ourselves to death." In his most recent book, *The End of Education,* Postman (1996) takes a worried look at the direction of public schooling in the United States. He believes that public schooling requires an overriding inclusive and compelling "one true story" in order to induct students into a process that will "hold its listeners" and give them the feeling of a common purpose by the "participation in a shared enterprise." Western culture's foundational narrative, or metanarrative, has traditionally come through a common understanding of the heritage and legacies of a historic past, a

shared pride and belonging that comes with knowing your country's your stories. This is the intention that lies behind the institution of the Public School in Canada; this has been the narrative students are to live on the Canadian school landscape. For Postman, the stories that are chosen as metanarrative determine the end purpose of education. Postman cautions public school educators and policy makers against choosing technology as education's success story and voice.

German philosopher Martin Heidegger (1977) wrote that "the question concerning technology is the question concerning the constellation in which revealing and concealing, in which the coming to presence [endurance] of truth, comes to pass" (p. 33). Heidegger, too, cautions that the nature of technology presents a critical moral dilemma. For Heidegger, the danger lies in the false "revealing nature of technology" whereby we are seduced into becoming 'true believers' as technology, by its very nature, has the capacity to induct one into a manipulative mind set that distances or removes one from knowing the truth. In this way, technology removes one from the true essence of Being-- "the ground from which things emanate" (Porter, 1998, p. D10)-- in relationship to life itself . Technology by its very nature tampers with the "real truth" according to Heidegger. Truth is to be found elsewhere, its source lies in the natural world, and not the material or mechanical world. For Heidegger, ultimate truth is revealed only in "absolute reality", that is the reality that lies in nature, behind appearances, and behind the images described in texts and narratives. He implies that we can look for truths and consequences in the submerged narrative, and assumes that an "essential truth" is possible. Heidegger warns us that the more we rely on technology the further removed we become from this truth and thereby our connection with true meanings and, eventually, with the authenticity of who we are and who we are meant to be.

In my opinion, McLuhan's, Postman's and Heidegger's thoughts, warnings and foretellings on technology are matters of concern to North American educators. I think all three imply that there is a need to look for the submerged narrative in order to understand the nature of Western culture's way of knowing in relationship to technology. It is a given that digital technology, with its capacity to virtualize reality, has moved North American culture from the page to hypertext and is now rapidly moving 'into the screen' with virtual hyper-reality text. How this electric image-based text is going to make its impact felt on social and educational landscapes and what this impact is going to mean are not givens. For example, will the impact be on the way students think about what is real? About their identities? Does it mean that Western society will learn to think and see differently, and develop a different mode of consciousness? Will this change pedagogy, the learning process, literacy? Will the next "cyber" generation be somehow different? Does how we know change what we know? Are there precedents and lessons to be learned from history?

How questions get answered, and what policy decisions then get made, will be a reflection of the kinds of questions asked as "questions are important. Not because the answers make us better systems experts or educational technologists . . . but because the questions help us become more responsible human beings" (Jamison, 1994, p. 69). Raising questions relevant for a dialogue on, and exploration of, digital technology is my intent.

Summary

In this thesis I am interested in the meanings that are being made vis-à-vis digital technology and the "virtualizing" of social and educational landscapes within the context of changing communications technologies. By means of documentary research, for the most part by surveying contemporary media documents, and by contrasting the

Western literacy tradition with the Native oral tradition, I am engaging in a social inquiry of an exploratory and reflexive nature. Is there a "submerged narrative" on this landscape, that is, a story not being told, one we are not aware of, or one we silently agree not to tell? Or are the stories always shifting? If so, what do they it look like, who are the authors, and how do we read them? Is digital technology introducing a new way of knowing and changing traditional Western education? It is hoped that such an exploration offers a relevant context for developing pedagogical questions in relationship to digital technology.

Focus

In researching the narrative emerging on the new technologies frontier I needed to look at digital technology and, in particular, its virtualizing capabilities. Empirical testing, interviewing and recording, reading and researching the printed page, and observing television's analog programs, have empirical "warranty;" that is, a guarantee of some sort of tangible, durable, concrete evidence. Working with digital text has less of a guarantee, and going into the screen into a cyberspace has no such guarantee. With digital text we can re-write evidence. This text's warranty, on the screen and in the sceen, is in-progress. What would an appropriate context be? One way to get closer to developing a context was to look at a culture familiar with virtualized landscapes.

Contrasting the Western literacy tradition with a tradition that is orality-based and familiar with virtual landscapes provided a way to draw the Western literacy tradition into relief, and enabled me to start a dialogue on different ways of knowing. Towards this end, my questions focused on the crossing of traditionally Western borders on virtualized landscapes. I came to realize that reading digital text involves a new

pedagogy and form of literacy, a "techno-digital literacy"-- a literacy with new language, new concepts, and a new mode of discourse, but also, possibly, a new mode of consciousness and way of thinking.

Social Contribution

The thesis offers no conclusions, but it does present views of what the digital landscape with its virtualizing text might look like. These views are presented as a dialogue with you, the reader. How are changing "social knowledge landscapes," and "school landscapes, " and the "teacher's professional knowledge landscapes," being read? (Clandinin & Connelly, 1996). As educators do we use this new digital technology as toy, tool, teacher, friend, family, community? Who gets to decide? Can we ignore the fact that the media's largest market is the home and school, and that:

> Selling images, data and information appliances is a godsend to a world economy whose markets are glutted. ...it lodges in the space of the home and school the perfect means to manage and control public opinion and taste, so necessary to the success of the information economy. (Johnson, 1993, p. 7)

If this exploration raises questions with respect to different ways of knowing 'off the page' and 'on the page,' and not only 'on the screen' but now also 'in the cyberspace screen,' and a recognition of the learning process we are involved in therein, then I think this thesis will have made a contribution to the field of education

Overview

The New Communication Technologies Frontier

Digital technology, in combination with electronic mass media, is changing the way members of Western culture communicate, do business, go to war, access information and educate. Columbia University Press's (1997) on-line website promoting University of Toronto political science professor Ronald Deibert's book

Parchment, Printing, and Hypermedia: Communication and World Order Transformation , Deibert goes so far as to ask:

> Will the growing use of these technologies cause a shift in security concerns away from "international" to intra-planetary issues? Will we witness a proliferation of non-territorial communities defined in "virtual" space? Internet -- or hypermedia -- with their unprecedented capability to blur territorial and political lines, will have an effect on all spheres of human interaction, from economic production and political security to knowledge and culture. (Columbia University Press, 1998)

Is the real problem going to be the medium, or who controls it and gets there first? Here is the business executive excitedly reporting on virtual CD-ROM 'touring' technology that would have been unthinkable two years ago, "we digitized everything onto a laptop and carried the entire presentation through Latin America on two Think Pads. ...the great thing about all this technology is that you can combine various media to engage the audience's senses as well as their brain ("Report on Computers," 1998). We need only a few digital technological tools such as a cell phone, laptop computer, and possibly a portable Jfax, to be open for business, or for that matter, school.

The growth of the digital technological market and this technology's change rate is so accelerated that it is impossible to stay up-to-date. In this market "IT is it. Information Technology that is. IT is one of the fastest-growing sectors of the economy" (Notley, 1998, p. J1). The "Digital Age" provides instant marketing accessibility and virtual media market environments. Within less than twenty minutes the CNN news distribution service can access a world-wide media market for any newsworthy event. Often news of an event reaches those world-wide markets before it reaches those who are directly impacted. Market demands for digitized "live action" news leaves no time for the question of ethics.

Anywhere there is text, in whatever form, there is a task for digitizing. By 1977 the number of Internet users was thought to be as high as 50 million with an estimated 10,000 new computer hosts added daily. Over 90% of these hosts were in North

American and Western Europe. By 1998 it was reported there were figures as high as two hundred million recently and the audience for this many sites is thought to be 35 million ("Computer Chaos," 1998, p. B2).

Changing Social and Educational Landscapes

Often forgotten in the excitement is the programmer who is scripting the computer program. The Internet originated as "a military computer network, designed to sustain damage and keep working in the event of a military attack ("Internet military origins,"1996, p. H4). In 1995, a post Cold War US- Russian security conference reports that "Russian military thinking is being revolutionized by the concept of information warfare." A military doctrine from this same conference reads, "Considering the possible catastrophic consequences of the use of strategic information warfare means an enemy Russia retains the right to use nuclear weapons first, against the means and forces of information warfare" ("Cyberwar," 1998, p. B2). In fighting today's wars, both informational and on the ground, the military creed is putting in place a digital technology that wins in warfare. The media's use of the language of military simulations technology attests to moving in this direction.

New military high tech language blurs the boundaries between tool and product, machine and human. With digital technology's capacity to structure electronically "wired" systems (human or otherwise), mechanical tanks become "killer" tanks, soldiers are made smarter with "smart" weapons, and there are "attack helicopters" on "digital" battlefields. This language makes it difficult to know which is the noun and which is the verb. One is reminded by George Orwell (1961) of the consequences of "Newspeak," which is English with certain words taken out. For example, when you cannot say "democracy" you cannot think it.

Digital technology is changing the way we think about the boundaries between what is machine-made and what is born-of-nature, between the human and the machine. The repositioning of people in relationship to animating technology with new language and concepts prompts us to wonder whether we are proposing to make smarter students with "smart classrooms?" It remains to be seen whether or not the technological tools become the teachers as McLuhan predicted.

According to Todd Oppenheimer (1997), current thinking is that computers in schools do equal smart schools and smart students. The school landscape is described in 'daily-doubles' type headlines that keep up a running commentary on the current 'winners' in what seems to read like a 'perfect school of the future' competition. We see headlines such as "Schoolnet goes on-line: The objective of Schoolnet, which is an initiative of Industry Canada is to reach all 16,000 Canadian schools with the Internet by 1997" ("Schoolnet Goes On-Line," 1995, p. B2); "Students getting laptops - The school landed the deal with IBM by agreeing to be used as a test site and for tours and promotions" ("Students getting laptops," 1996, p. H5); "Alberta regains bragging rights to most Web-wired schooling", "Students' software magic promises less paperwork" ("Alberta regains bragging rights," 1997, p. A6); "in 10 years the school wants 100,000 students with virtually all the new students made up of Internet learners who would work out of their own homes" ("100,000 new students" 1998, p. B1).

The chair of Southern Alberta Institute of Technology Board of Governors reports: "The school now has 57,000 full and part time students, 10,000 of them who are connected to their instructors by the Internet" (Worron, 1998, p. B1); and "NAIT launches 13 new programs helping Albertans keep pace with rapidly changing technology" ("NAIT launches 13 new programs," 1996, p. G10). Most recently, Alberta Education was honored for using smart technology to bring "Alberta schools into the Information Age" ("Alberta schools, 1998, p. H8). Edmonton (the city in

which I live) was awarded a nationwide Smart City designation. Smart information technology applications on social and educational landscapes are achievements to be honored ("Smart Start," 1998, p. H8).

The stories on the professional knowledge landscape are, for the most part, equally enthusiastic. For example, the art history professor who prefers teaching with the EMIC computer program which has a data bank of 250,000 images, with the class now held in the computer lab. University of Alberta academic technologists speak positively about enhancing classroom delivery through 'smart classrooms.' The futurist author of *Transforming Higher Education: A Vision for Learning in the 21st Century* Michael Dolence (1995), in a public lecture at the University of Alberta, reports that the more than 10,000 Internet and virtual university courses currently offered are "about to galvanize the globalization of learning" (November,98 1996). The message is clear--students will be "left in the dust" unless they are "wired."

Along with Postman, there are dissenting, thoughtful, and oppositional voices such as Ellul (1990), Norman (1993), Stoll (1995), and Gatto (as cited in Roszak (1997). Roszak paraphrases the John Taylor Gato (1992) book titled *Dumbing Us Down: The Hidden Curriculum of Compulsory Schooling* when he titles his article *Dumbing Us Down* , and writes that "over the generations, teachers have evolved skills to encourage a respect for quality, truth and good taste. I'm not sure I understand why we should, at the behest of entrepreneurial elements, now decide to retire those skills in favor of "yahooligans" (Roszak, 1996, p.12). Does using digital technology make for smart people and smart students in a smart city? What meanings are to be made from these stories?

A New Language, Wired is Not a Metaphor

A newly developing educational context is reflected in computer language, with language reconfigurations which blur the boundaries between the 'soft' humanities and the 'hard' technologies. I begin to realize that wired is not meant as a metaphor when Nathan Myhrvold of Microsoft Corporation refers to the role and task of the computer programmer as giving "soul to the computer" (Gates, 1996). Being wired means having instant electronic access via computer to millions of digital "data packets." We are wired to "desktop highways" and, in turn, those services in any place these digital roads lead to. There are Internet websites for virtual bookstores, newsstands, newspapers, and magazines ("zines"); for watching youth "videotronic" (on-line television); interacting with pornographic images, reading sacred writings, viewing sacred images; traveling virtually, visiting museums, listening to music; sending e-mail; banking and buying, and on and on. The reading, viewing, listening, writing, interacting and producing possibilities seem endless. In other words, any data in any form anywhere that can be digitized can be wired.

I can plug-in to wired university lectures from a "virtual professor" at a "Televersity," and take wired or on-line university degree courses. In the computer lab, educators are learning Web development Hypertext Markup Language (HTML) in order to teach their students to program their own wired, 'hot-linked world.' Graduate students are eager to put their thesis on CD-ROM. In this process, as Western culture becomes reconfigured to computer culture, the language is changing with new linguistic and conceptual combinations, and changing how we come to know what we must know.

Each day we have a new linguistic and conceptual combination. For example, there is "cyberage," "virtual sisterhood" possibilities; a "multi-channel world,"

electronic "guerrilla journalism," the "cyberpunk," the "genetic information age," with "genetic technology and genetic prospecting," a "cybercountry," and a "cybernetic future," computer "downloaded memories," and "hypertext minds." The most promising job prospects are as a "webmaster." There is "digital science," and the possibility of "cybersex." The fusion of human and machine can be seen in the "cyborg," or with the "avatar" in cyberspace. There are "cybergurus," and "digital Docs." Academic, scientific and non-academic literature, fiction and non-fiction refer to "Cyberion city," the "Simnet," a "Borgian space," in "biomorphland," the pros and cons of "knowledge architecture," and "performance technology," the "butterfly effect", the "virtual student," etc.

Computer literate educators refer to "democratic computer environments," "techno collaborative knowledge building," and digital "artificial life forms in technosphere's." In their new media design program, The Canadian Film Centre offers a course module in "The Art and Craft of Digital Storytelling" where participants "examine narrative theory from a variety of traditional, new media and cyberworld perspectives," using the new media of electronic genre fiction games, MUDS, and electronic soap operas (Canadian Film Centre, 1998).

The new digital text, with its techno-human linguistic and conceptual reconfigurations, underscores the need for a serious reconsideration of my traditional frame of reference. I realize digital techno-literacy is a new educational field.

A New Context

Contemporary Western writers on digital technology such as Sherry Turkle (1995), Kevin Kelly (1994), Derrick de Kerchov (1995), Mark Slouka (1996), Arthur Krocker (1994, 1997), and Neil Postman (1992, 1996), to mention only a few, commonly refer to "computer or cyber culture" and "Web lifestyles" in exploring the

major changes currently taking place on cultural, social, scientific and educational landscapes. From within the context of computer culture, they explore our beliefs about reality, virtuality, identity and Self. What happens when Western culture's traditional boundaries between the born (organic, human, nature) and the made (mechanical, machine, technology), between the real and the virtual, go 'soft' and in some cases seemingly disappear altogether. For example, some new biotechnological systems (ecobionospheres) have properties of all states (born, made, real, virtual), and are referred to by their designers and programmers as vivisystems.

These writers, and now many others, are looking not only at a new technological frontier but at new landscapes not yet set. Digital and bio technologies are major forces emerging behind these new landscapes for which there are no known maps in the traditional sense. On this landscape, the computer programmer is also the cartographer. Who is to say what the emerging narrative will be?

Emerging Virtual Landscapes

A moveable feast (some might say beast), digital technology is creating not only new landscapes but also new worlds. In-the-screen virtual landscapes conjure up virtual realities that are shaping computer-based "cyber culture," while computer programmers are designing virtualized landscapes as "ultra-democratic environments." Players in cyberspace "MOOS" and "MUDS" (multiple virtual reality user computer domains) are offered multiple choices in creating various personas and characters by controlling and manipulating image-based text and objects that appeal to many senses and cross many traditional boundaries.

A MOO or MUD is usually programmed with few if any rules of conduct. Programming rights are arbitrary in cyberspace. A philosophical perspective could, for example, view a cyberspaces' "submerged narrative" as Hobbesian ("nasty, brutish

and short"). Insofar as they do not grow naturally over time in situ, human rights are not naturally discoverable here. As such, cyberspace culture could be viewed as an invitation to irresponsibility. On the other hand, a cyberspace could become 'Lockean' if its occupants take it upon themselves to request programming moral dimensions into cyberspace.

In this culture, cyberspaces' virtual worlds are visited, for example, in the following manner, whereby,

> You, the player, are plunked down into a strange, graphically gorgeous world. Everything is shrouded in mystery; at the outset, you're not even sure what you're supposed to do. You just walk around, exploring the disturbingly quiet and isolated set of islands. Slowly, if you're very observant and take close notes, you'll find enough clues to begin solving a series of hellishly complicated puzzles, which ultimately reveal the submerged narrative. ("At play," 1997, p. C12).

My own MOO experience was one of frustration in failing to grasp that traditional Western literacy rules do not apply in cyberspace. 'Reading' cyberspace was not like the reading I knew how to do. I could not read this text until I realized that cyberspace is not a reading activity in the Western literacy tradition. Going into the cyberspace put me in a different state and required a different mindset. I found traditonal conceptual structures did not work, and I did not have the mode to deal with a system that did not have an "explanatory coherence."

A cyber world is about an aesthetic world in that it's text is for the most part visual, and positions us in relationship to developing an imagined persona(s) -- our own and others -- in relationship to this aesthetic world, in a process of instantly experiencing 'being' something other than, and somewhere other than. Multiple states of being in relationship to multiple worlds is a central theme in the narrative of cyberspace. In learning to read this dynamic text, I too, like the "cyber-pilot" who talks of "flying-by-wire," experienced being drawn into the computer animator's world.

In this world I respond physiologically to a virtualized landscape as readily as I do to a real landscape.

This boundary crossing takes me aback. It was the extent of this boundary crossing that suggested the traditional Native oral tradition's frame of reference, and central use of the concept of liminality and liminal states of being, in relationship to social and educational landscapes.

Background

Traditional Contexts

Any given culture teaches its beliefs, its social construction of, for example the "making of children," in certain modes that require an induction process, in other words, a medium for learning the spoken code, the printed code, and most recently, the digital code. For example, North American Native cultures were traditionally oral-based and used storytelling and demonstration as teaching texts in the induction process. As its text is oral, its literacy could be referred to as an oral-based literacy. Western culture's literacy means learning print code. The printed page is used in the induction process, and its literacy is print-based. Historically, the shift from an oral-based European culture to a literacy print-based paper culture transformed not only how information was accessed but how people communicated with each other, and subsequently what constituted knowledge and what was learned.

For Ivan Illich (1993) the kind of text shapes the kind of mind, or mindset. By the late twelfth century the book, in Illich's view, had become more a "source of knowledge" than a source of "oral reading and wisdom." The student's learning, through an understanding of oral communication, was replaced by the written lecture and a visible text. This was a different way of knowing. The first technologically

driven mass media that changed forever the way many cultures have come to know themselves was the printing press.

During the Reformation a new social contract for European women and men in relationship to work and children developed within the context of Western culture's new technology. This was done in large part through the socially constructed imposition of the new concepts of childhood and motherhood in relationship to meeting literacy needs. Women were needed for a different role, one that involved a different form of education. Before the Protestant Reformation, the child dressed as an adult and was treated as such, as an adult only smaller, and apprenticed out in the community by age five or six (Rooke, 1997). The progression from child as small adult, to child as child, is but one hundred and fifty years old.

Rooke (1996) has observed that as the role of women changes in society so does the role for children, and although:

> the question of literacy is an obvious study for a history of childhood, in fact few of us have examined the pedagogical or psychological implications of its relationship to the making of children, or for that matter, the making of mothers. I believe that the emphasis on literacy which transformed Western societies during and after the Protestant Reformation provides a key to understanding this relationship. (p. 6)

Twentieth century childhood now is extended to approximately age seventeen in direct relationship to the rise of high school, and the new construction of the adolescence teenager is a 20th century social construction (Rooke, 1997). Sociologist Donna Gaines (1991) describes contemporary Western society's "ideology of adolescence" in terms of constructing what a society requires at certain times based on what is economically required. For example, she describes the United States in the 1950's as a time when more working-class youth were able to afford to be teenagers.

Gaines (1991) notes that a media industry focused on the adolescent was not required fifty years ago as most young people (adolescent ages 15 and up) were out of

the home, working, getting married and raising families. She reports that when young people are not needed for their labor they are infantilized, and when their labor is required, society socially constructs and "invents nurturing institutions." If required for war they are emancipated and spoken of in the "rhetoric's of competence." She further notes that the 'healthy' nuclear family is not widely represented in the mass media, and sees this as a commodification of children in the sense that they are portrayed as somehow having to be dealt with, "streamlined" as part of a "downsized world." The construct of adolescent is managed, promoted and amplified by the media as required (Gaines, 1991). For the popular media of today "the big news. ...the Oldsmobile Silhouette has its own built-in television screen for showing movies to the kids of all ages sitting in the back" (Cato, 1998, p. H3).

In Western culture the imposition of social constructions requires its members to understand the nature of mass media communication. In contrast, the Native oral tradition required its members to understand the forces of nature and life's processes (Allen, 1997).

Communications Technology and Education

Western culture's media landscape as both form and content is as much about a transformative process as it is about its informational content. So, too, is the educational landscape,

> Virtually all that we know or think we know about the world beyond our immediate experience comes to us through the media. There would be little problem with this if the media simply reflected reality. But in fact, we now know that each medium of communication shapes or codifies reality in different ways. (Ontario Ministry of Education, 1989, p. 5)

The child in contemporary Western culture has instant and immediate participation in the adult world through television viewing. Television is a vehicle for the mass media

construction of childhood in relationship to the adult world. And yet interest in mass media communication in the form of media literacy in schools has been slow to develop:

> All mass media with which we come into contact contains messages about values, beliefs, and behaviors and in addition are shaped by economic factors. The fact that the media have remained outside the school curriculum at the same time as they have come to dominate so many aspects of our society, and indeed our individual consciousness is a tribute to their power to influence us on the levels of which we are unaware. It is not surprising then that we have come to study the media; it is only surprising that it has taken us so long. (p. 5)

Educators have since paid attention to television with respect to the socialization of children and the claims the media makers make on our culture, minds, and identity.

In *Teen Trends* Bibby (1992) referred to television as "the modern hearth" after researching the amount of time teens spend watching television (p. 273). Ten years ago the British peace educator David Hicks (1988) wrote that one of the tasks for the 1990's will be to pay "increasing attention to the role of the media in influencing children's attitudes towards violence as well as affecting the formation of their views of the world"(p. 25). He observed that educational and social control messages are written into media scripts that address what these attitudes and views are going to be and recommended media literacy curriculum development.

In 1993, the American educator Selby began to ask questions that introduced the idea of looking at what kind of narrative is being constructed by the media, what the over-riding story being told of a people is, and where children are expected to fit into the big story? Selby's question is:

> To what extent are students being equipped with, to borrow from Alvin Toffler, the shock avoidance skills to cope with and handle an accelerating rate of change? Are they given the opportunity to study, discuss, reflect upon alternative, possible, probable, plausible and preferred futures? Are countervailing visions being offered to balance the "technical fix" and "spaceships and battlestars" view of the future fostered by the mass media? (p. 5)

Some media analysts warn that this critical role of determining by what means we tell our stories has been given over to television: "By any measure television has become

the 'social brain' of modern democracy...if an issue or concern does not appear on television, then for all practical purposes it does not exist in the mass social consciousness" (Elgin cited in Goodman, 1972 p.70).

Today, Canadian children data process electronic images day and night in a multichannel computerized universe and are socialized in Marshall McLuhan's electronic global village.

Purpose of the Research

Three years ago, at the beginning of this research project, there was a dearth of information on the phenomenon of digital text, cyberspace and the attendant, emerging cyber culture. This is no longer the case. Television, in relationship to mass media culture generated much writing and discussion, and today's new configuration of computer and popular culture is now also generating much writing and discussion. However, there is still a dearth of information on its relevance to what might concern educators with respect to 'techno-digital' literacy and "how children are made."

In using the computer, we not only accesses information digitally, we do simulations and virtualize realities. I think digital technology positions us in a different learning process because it engages a different set of behaviors that involve a different mode or mind set:

> If the ideology of the mechanical age was one of hierarchy, distance and sequence, the ideology of the digital age is one of multiplicity and interconnectedness. If the symbol of the mechanical age is the assembly line, the symbol of the digital age is the web. ("Technology's Web," 1997, p. D15)

Sherry Turkle (1995) refers to a "cycling" metaphor in describing what we would see watching this 'webby' set of new behaviors in accessing information. When accessing digital text on the computer screen we cycle across and/or through multiple media frames, interfaces and digital borders. The process is similar to looking at text on

the screen on television, but different in that computers involve an external doing in relationship to a machine. And in contrast to reading, more of the body, but possibly less of the imagination, is engaged. Different reading principles are involved. With the computer we are for the first time actively transporting digitized text both figuratively and literally.

This is a new way of accessing information, and in all likelihood, a different way of knowing for Western culture. For de Kerkchove (1995) the digital age is developing "a new skin," and hence, a new context for education.

Nature of the Problem

The rate of transport and ways in which information can be managed are now open-ended. Digital techno-tools are structuring the media "highways" and the instant electronic transporters that the next century will bring to Western culture. This technology brings with it a built-in propensity not only for change but also for rate of change. Consider for example that:

> A man comes along the street and sees a woman at a window. He comes upstairs, she crosses the room to him and they kiss. That's drama. The same man rushes upstairs and the woman rushes towards him and they collide and kiss and that's comedy. The man rushes upstairs and charges across the room like Groucho Marx and grabs the woman in an embrace and its a farce. You see, its all the same reality. It just takes place at different speeds. (Hoffman & DeNiro, 1998, p. C3)

As we speed up, will our reading of reality change? McLuhan (1964) thought that an excessive rate of change would further isolate "already fragmented individuals." At the speed of light "man has neither goals, objectives, nor private identity. He is an item in the data bank -- software only, easily forgotten -- and deeply resentful" (Techno-seers, 1996, p. 26). Psychologists tell us we now read in "clumps" of 3 words, that we do not really read anymore, rather, we are scanners.

We find both speed and the simulation of reality on virtual landscapes. How

fast do we need to be? The Globe & Mail reports in 1995 that there are "more than 12 billion microprocessors in use in the world"[a new car will have around thirty], and that IBM is spending 6 billion on research and development, anticipating "there will be 200 million [Internet users] in 2 years" (IBM Spending Six Billion, 1995, p. D1). The telecommunications company Nortel of Canada announced in November 1997 that it has the technology to send digital data over electric power lines thirty times faster than any modem at that time. The most recent estimates tell us that the number of "travelers" on the Internet doubles every six months, while these estimates themselves keep changing; "in the computer world we already have Moore's Law, which states that computer power doubles roughly every 18 months" ("Computer Power Doubles, 1997, p. D19).

When Nortel scientist Ian Vance was asked to envision telecommunications five years hence, he replied; "I can't. I simply do not know. It's changing so fast it is totally unfeasible to think three years hence, let alone five" ("Wired in a World," 1997, p. 19). In this same "World Without Frontiers" article it was estimated that as few as two hundred satellites would create an Internet in space. Digitized communications highways and information transporters make for complex media network systems that seem to have a built-in propensity for speed and change, and directing humans to machines in contrast to connecting humans to humans.

The crossing of boundaries between the born and the made, between human/nature and machine is driven by the contemporary scientific communities focus on the new "science of complexity" and the principles of biologic. The author of *Visions: How Science will Revolutionize the 21st Century* , United States physicist Michio Kaku (1997), tells us that "we're in the midst of not one but three revolutions, brought on by advances in biotechnology, computer science and quantum physics" ("Revolutionizing the 21st Century," 1997, p. 19). When the dust settles: "Observers predict the upheaval will have had an impact on society as great as the industrial

revolution and that the companies on the winners rostrum may be as unknown to us now as the technologies that put them there ("Another Revolution," 1997, p. 19).

It is a bit disconcerting to realize that with fiber optics and digitized sensory immersion systems cyberspace is open for business, and 'virtual cities' are ready for occupancy on the "other side of space and time". Kaku presents a future scenario of the electrode in one's shoe where "...All one would have to do is shake a person's hands. Because skin is salty and conducts electricity, a resume can travel from shoe to hands" ("Revolutionizing the 21st Century," 1997, p. D19). It is possible to consider reaching a point where we are wired such that the individual can choose to see 'live' images anywhere in the world.

Marshall McLuhan (1964) told us that text in the form of books divided us up, and television united us back into a global village as we all watched the same television program. With mass culture we have mass artifacts. In coupling popular culture with the computer, the global village has become individualized and personalized, as we wire ourselves on and into the computer screen.

Significance of the Study

Neil Postman (1996) positions public education at a crossroads. According to Postman a metanarrative such as civic participation, democracy, God and country, once answered what schools were for. These were the "transcendent narratives of substance" that provided the context and gave "purpose, clarity and meaning" to public schooling. Postman claims that public schooling today suffers "a loss of narrative," and predicts that without a shared common understanding as to the overall purpose of education, its center will not hold. Public education as it has been known, will end. The tragedy for Postman is that with its ending we will lose the means by which to

educate the next generation into common understandings amongst differences. We will lose our sense of "the commons."

A central idea in Postman's writings is that a culture's stories tell its members who they are, where they came from, and where they are going. In this way they define a shared identity and give a shared sense of purpose. Postman proposes one such worthwhile metanarrative would be teaching the story of Spaceship Earth. This metanarrative on the school landscape would inspire with stories of the nation state as an experiment, humans as an error-prone species, and tell the story of global consciousness. In *The End of Education* Postman (1996) acknowledges that education must position itself on the digital technology bandwagon, but he pleads with educators to ask along with him, "but to what pedagogical ends?" He worries that the new metanarrative will be the "Godhead" of technology.

Located on the same continuum but positioned somewhat more optomistically, post secondary educator and psychologist Dr. Greg Kearsley has no such worries. Nonetheless, he acknowledges that "Now it doesn't matter what you know. What matters is knowing where to find it" (Kearsley, 1997). Referring to himself as a virtual professor, Kearsley's campus is located wherever his laptop computer happens to be, and he encourages other academics to do the same.

Also positioned optomistically on this continuum, Sherry Turkle (1995) is focused on children's use of digital technology. In *Life on the Screen: Identity in the Age of the Internet* Turkle describes the process of accessing digital text by surveying young computer users. She has come to view the way information is accessed with the computer as "tinkering," and regards it as a "triumph of tinkering." With the computer we engage in a process of searching through a 'webby' network that she likens to the process to 'mucking about,' or "tinkering," and describes it by the French word "bricolage." According to Turkle, we are engaged in the process of bricolaging in

the post modern Digital Age. Her reports and conclusion are positive-- children adapt well to the computer, they are comfortable with bricolaging, and furthermore, enjoy the process.

Somewhat ironically, the Native North American oral tradition is also positioned on this contimuum, for it has a long and pre-postmodern history in the 'pedagogy of bricolaging' (albeit unacknowledged). Members of the Native oral tradition have always bricolaged as a way to access information and make meanings. Looking at the oral tradition provides a way into understanding what is involved in this new way of accessing digital text and reading virtualizing landscapes.

In *The Skin of Culture*, culture analyst de Kerchove (1995) sees the electric image based digital culture constructing a "return to oral values" and their dominance. He writes that "we are returning to an oral culture or, more precisely, to an electronic oral culture" (108). Derrick de Kerchove's observation, coupled with the Native oral tradition's history in bricolaging, merits serious consideration.

CHAPTER TWO

Methodology, Development and Framework

Part A. Methodology

Methods Used in Research

The Oxford English Dictionary defines research as an "endeavor to discover new or collate old facts etc. by scientific study of a subject, [or] course of critical investigation" (Simpson & Weiner, 1993-1997). Or, research is "a systematic quest for undiscovered truth. It is the search for an answer to an unresolved and perplexing question" (Leedy, 1974 , p. 9). Or, preferably, history can be defined as "fundamentally, the adventure of human consciousness" (Barrett, 1986, 10). The resulting data will usually reveal its meaning and relevance through aggregation or interpretation. In general, aggregation will focus on quantitative measures and correlations, while interpretation will focus on what is worth saving (Stake, 1995). Data that are documentary in nature are considered historical data, and as such, they call for a historical research strategy.

A histographic research strategy will look at the evidence in an archive. This same strategy can be applied to contemporary history, insofar as the researcher is looking for evidence as well as at evidence,

> One of the most valuable 'lessons' which history teaches, then, is the sense of what is durable and what is transient or contingent in our present condition. ...As Tawney put it in a characteristically elegant metaphor: If he [the historian] visits the cellars, it is not for love of the dust, but to estimate the stability of the edifice, and because, to grasp the meaning of the cracks, he must know the quality of its foundation. (Tosh, 1984, p. 15)

This thesis looks at how what has endured is interpreted both through oral testimony, written and media text.

It is commonly assumed (although this assumption is being challenged) that hard evidence, that is, artifacts and supporting written documentation, is preferable to oral testimony. Oral testimony as text has usually been thought of as 'back-up' evidence due to the problematic nature of establishing its authenticity over time. And yet, within the past year, the Supreme Court of Canada has developed legal protocols for the inclusion of oral testimony in law courts with respect to Native land claims. For the most part, historians now regard oral history as serious evidence of how popular historical consciousness is constructed. This type of evidence's importance is underscored by recognizing that "oral history allows the researcher to observe and discover primary historical sources" (Kirwin, 1992. p. 116).

The research method is interpretive in a hermeneutic sense. Leedy (1974) discusses the hermeneutic nature as follows:

> The historical method aims to assess the meaning and to read the message of the happenings in which men and events relate meaningfully to each other. The object of the historical method, therefore, is to interpret the signs of the times past and to see in what might otherwise be considered merely the happenstance of blind fortune a rationale and design. (p. 71)

Technology's own history is a history of cannibalizing itself, that is, an earlier technology will be incorporated into a later technology. In this sense, technology's historical pattern can be considered inherently evolutionary.

A histographic approach enabled the researcher to survey contemporary documents in an attempt to 'read' at the pattern level of analysis, even though as Barrett asserts, "Patterns in history are often hard to discern, and sometimes they turn out to be illusory. But there is one clear pattern within modern history that seems beyond doubt, namely, the continued development of science and technology" (Barrett, 1986, p. 163). By collecting, interpreting and presenting documents, that is, "modern artifacts" on the contemporary landscape, and by inquiring into the oral tradition, we may provide a

credible review process. The contrast of Western tradition with the Native oral tradition allowed the researcher to enlarge the perspective.

Source of Documents

Although the theoretical framework for this research is historical, the perspective can be considered essentially contemporary. The data come from "contemporary historical sources," that is, from the research literature, popular culture and mass media, and from oral, print, film, video and computer sources. The majority of the documents are from contemporary mass media sources as this is an appropriate place to look for how this medium is being responded to by the media in their role as culture's arbiters of social reality.

The data can be considered normative or descriptive 'survey-like' data in that the documents and artifacts "contend with institutions, structures, practices, and conventions that people reproduce and transform. Human meanings and intentions are worked out within the frameworks of these social structures" (Miles & Huberman, 1994, p. 4).

Kinds of Data

Historical Texts

Traditionally, documents such as a specific text written by people who were involved with an issue of concern, as well as what has been written about an event at the time are considered historical evidence. For example, a document could be an actual treaty or a report on the event of the actual signing of the treaty, or an artifact such as a stone carving or a descriptive record of an object such as a stone carving, a pictograph, a collection of images, a single photograph, or a technological tool for communication. A video tape document can be considered a modern artifact, a record

compiling visual data from secondary and tertiary sources in which "the information has already been sifted and structured, albeit by someone else" (Preece. 1994, p. 81). A document could be a record such as the actual media/video text itself; for example, a website. Or a document could be an oral testimony.

Oral Testimony

The oral sources used in this research come from University professors who are familiar with the methods of social science and history. For the past twenty years, Dr. Paula Gunn-Allen has researched, lectured and written extensively on the pedagogy of oral literature in the Native Traditional culture and has compiled and documented these narratives. Oral testimony coming from these sources, that is academic scholarship, can be considered as,

> An oral history which is informed by psychological insight and supported with the full resources of historical scholarship [and] has a major contribution to make here -- one that takes it far beyond the life-histories of the social sciences from which the oral history method is derived. (Trevor cited in Thompson, 1988, p. 181)

For example, Native oral traditional teaching texts or Ur texts have endured and stood the test of time. Ur texts have been researched and documented by Allen (1983) and, in this way, have become contemporary documents.

Data Base

Data have been collected over a three-year period of time. Text has been listened to, read, and viewed, in whatever form it presented itself, that is, oral, print, analog, or digital. The data base comes from a variety of texts, for example, academic journals, popular and lay descriptions of the technology/media itself, digitized text in the form of computer web sites and cyberspaces, mass media reports (newspaper/media/video texts), and oral testimony from secondary sources.

The research data are derived from four main sources. Documents and artifacts that are:

1. print/paper based - books, journals, articles, newspapers;
2. analog based - video, television, audio programs;
3. digitally based - computer programs, system networks;
4. oral based - post secondary lectures, personal conversations.

Setting

From Edmonton, Alberta, Canada, I gathered the data, conducted a brief media literacy survey, participated in exploring digital technologies, and produced video programs and a CD-ROM.

North America is the cultural, social and educational setting for the research.

Interpretation

In large part, the interpretation addresses data in the form of what other people have said. My task was to identify relevant critical questions with respect to digital technology, virtualizing landscapes and different ways of knowing.

My overall intention has been to progressively focus the research in order to bring to the foreground a relevant frame of reference, and, some of the best thoughts forward, whether formal or informal, with which to consider digital technology.

Part B. Development

Beginning the Research

When I began this research, the number of educators accessing Internet on-line teaching, and, in particular, those writing about the new communications and information technology were small. It is a testament to the fast breaking nature of

digital technology, and its growing influence in driving educational environments, that I can no longer claim this thesis has kept abreast of either what is being written on digital technology, or the new developments in the technology.

The rapid integration of computer learning into educational curriculum is such that it is commonplace for Canadian first grader's first 'take home', is to request parental permission to access the Internet. A conference on "The Virtual School" is no longer uncommon. This accelerated rate of change, in addition to the power and speed of the innovations in digital technological change itself, is in itself a new phenomenon.

A Brief Survey of the Literature on Communications Technology and Education

Media Literacy and Education

In order to focus the research I briefly surveyed the literature on media literacy. What were other educators interested in with respect to media literacy and digital text? Were other educator's looking at how to read digital text?

A review of thesis and dissertation topics in Educational Policy Studies at the University of Alberta revealed a dearth of research into the specific area of problematizing digital technology for education. I realized that 'digital techno-literacy' referred to learning to use computer programs and computer programming, and not to analyzing pedagogy in relationship to digital text, and no measurable precedent had been set by media literacy.

A brief Canadian survey revealed that media literacy has not been a large part of the Canadian school curriculum in the past. However, as television culture gained credibility as a legitimate area of study, mass media literacy did gather some momentum.

It is important to note that "media literacy" curriculum focuses on television viewing for the most part and not to digital text and virtualizing computer technologies.

The following titles of various articles written by educators give a brief developmental overview, with respect to the initial range of interest, on professional knowledge and school landscapes over the years. Judy Samoil (1978) writes that, "as a classroom teacher you may not make the grade when competing with *The Magical Mystical World of Kidvid.* In 1988 G. Clapp asks is *Television: Today's Most Important Socializer*? while Dale Kunkel and Donald Roberts (1991) look at *Young Minds and Marketplace Values: Issues in Children's Television Advertising.* In 1993, *Television and Schooling: Displacement and Distraction Hypothesis* is researched by Donald Roberts, Lisa Henriksen, David Voelker, and D.P.van Vuuren (1993), and *Television's Effect on Cognitive Development* by B. R. Naidu, B. R. and Belle Wallace (1993). Again, in 1993, there is interest in *Learning About Television Violence: The Impact of a Critical Viewing Curriculum On Children's Attitudinal Judgments OF Crime Series* (Marcel Vooijs, Tom Vander Voort), and *Television Viewing and School Achievement: media effects on the young* (Mark Fetler).

In Eastern Canada, in Ontario, a media literacy curriculum has been introduced and integrated at the elementary level. This initiative is the result of the leadership role taken by The Association of Media Literacy in Ontario, and the successful piloting of media literacy at the secondary level. The Association conference at the Media Literacy Summer Institute in August 1995 addressed "Media and Global Issues: Cross Curricular Breakthroughs." Quebec has recently formed a committee to look at introducing media education to the language arts curriculum.

In Western Canada, the British Columbia Ministry Of Education has been looking at a proposal to integrate media literacy in all areas across the curriculum. In Alberta, at the secondary level, the Social Studies curriculum has an optional media

literacy component; the elementary level is also optional (Slavik, 1994). The Alberta Association for Media Awareness offers assistance to the Alberta Education Junior High Language Arts Program of Studies with respect to media awareness, and there is an optional media literacy curriculum component in the elementary level of instruction.

By 1997, participants attending the Ontario Association for Media Literacy annual conference, are listening to plenary speaker Douglas Rushkoff (1994, 1996), author of *Cyberia,* and most recently, *Playing the Future: How Kids' Culture Can Teach Us to Survive in an Age of Chaos. In Playing the Future*, Rushkoff (1996) looks at "kids' culture", and in particular, their media culture. He argues that educators must take take a serious look at this culture because in doing so they will realize that kids' television behavior does not fall into the category of a "media stupor," kid's, in fact, tare aware of being programmed; their channel surfing behavior actually signifies "staying awake" in front of the screen. In Rushkoff's view, children are paying attention to the programming, critiquing it, and developing coping strategies for dealing with what is inappropriately called "chaotic culture" by inexperienced adults, parents and educators.

Professional Knowledge and School Landscapes

What meanings are being made on the professional knowledge and school landscapes? Dialogue in the public domain amongst academics covers a wide range of opinions on the ownership of intellectual property, plagiarism and theft in the accessing of digital text and in the production of computer-generated, electronically-based programs and materials, the rationale and requirements necessary for using digital technology for teaching, and strategies for bringing distance education on-line. Overall, educational research-based academic discussions focuses on learning theories in relationship to the ways that computers can be used to help us accomplish a task better

and/or quicker, and the advantages offered by distance education. Educational psychologist Dr. Greg Kearsley (1985, 1992) is a pioneer researcher into "learning technologies," and the relationship between learning theories and the new technology which makes distance education possible. As a virtual professor, that is "a professor without spatial and temporal restrictions," Kearsley encourages pedagogy that uses programs on the Internet (Kearsley, 1997).

Kearsley (1998) argues on-line that the Internet is an ideal vehicle for facilitating a continuously current immediate feedback loop for academic scholarship, teaching, and learning. If students are on-line, Web conferences, chat rooms, simulations and MOO cyberspace academic environments provide more feedback resources than a regular classroom. Unlike a finite book, a web site "can go on and on" accessing work from all over the world. This capacity "takes the whole field of scholarship another step" for academics working on-line as one is able to "get a real feel for what is going on" in respective fields. Kearsley also claims teaching with high performance interactive technology adds a "global element" and thus counteracts the "ethnocentrism associated with print based text culture."

In Robert Edgar's (1998) on-line paper *PC is to Piaget as WWW is to Vygotsky,* delivered at the international computer conference SIGGRAPH '95 (Special Interest Group for Telecommunications) in conjunction with International Society for Technology in Education, Edgar introduces thinking about established learning theories in relationship to the structure and design of "dominant computer platforms:"

> The development of educational pedagogy has interesting parallels with the development of personal computer technology. Centralized and autocratic, mainframe technology (and, in the public schools, similarly architected Instructional Learning Systems) distributed a CAI (computer-assisted instruction) approach to education which was strictly content-based and driven by behavioral objectives.

Edgar (1998) draws an analogy between Piaget's theory and personal computers (PC), and Vygotsky's theory to the Internet's World Wide Web (WWW). For example, he theorizes that PC learning is inherently contextualized and cross-curricular while the WWW is comprised of hyperlinks, and that individual language begins in a social space. Whereas, the WWW introduces students to a post-spatial experience. Edgar writes:

> With the onslaught of personal computers came the popularity of constructivist approaches to educational technology, where open-ended environments provided individual students with tools to experiment and build their own learning constructs. In the last few years, as the Internet and World Wide Web have matured; the social aspects of learning as described by Vygotsky have become useful for those looking to design educational projects involving a distributed but intercommunicating audience.

On an institutional level, the University of Alberta's Faculty of Education's Department of Educational Policy Studies will be offering a first-time course on Technology and Society in 1999. Thus far, The Faculty of Education offers a Master's degree in Instructional Technology, and houses the Institute for Advanced Learning Technologies, the Canadian Centre for the Development of Instructional Computing, and the Division of Technology in Education. In another move, in the direction of situating the school landscape on the "high-tech frontier," Edmonton, Alberta, hosted a Digital School Conference (November, 1998).

On the provincial level the Premier of Alberta announced a "Campus Alberta" initiative in 1998 that would see Alberta's universities 'wired' into one electronic campus. And in January of this year it was publically announced that more than one million dollars will go to the development of a virtual reality laboratory in the Department of Education in partnership with a major Canadian oil company.

Although the Alberta Government cut 224 million from public education over a three year period of time (1993 - 1996) it announced in 1996 that it will invest 45 million in classroom technology over the next three years (Dwyer, 1996, p. 41). The mandate set by the Canadian government is that "every school must have access to the Internet"

("Every School Wired," 1998, p. J1). Canadian government policy is launching "Canadian schools into cyberspace" in partnership with corporations; for example, the Federal Government's SchoolNet system initiative in partnership with Bell Canada, Unitel and Apple Computer. This system "now links almost half of the nation's 16,500 public schools to the Internet -- and each other" (Dwyer, 1996, pp. 40-41). A further federal investment in a networking project has been made to reach a long term goal "to figure out how technology can be designed to transform Canadian students into hooked-in, lifelong learners" (p. 42). Reaching this particular goal currently involves more than 125 researchers at 28 Canadian universities. Ontario Institute for Studies in Education professor and participant Marlene Scardamalia reports that the Computer Supported Intentional Learning Environment software program she is researching "shows the potential of technology to transform students into knowledge builders. ...What we're ultimately trying to create is classrooms that mimic the communal learning culture that experts live in all the time" (p. 43).

Many schools across Canada are following the Federal directive. For example, the stated goal for Toronto's Heritage Park Public School (where each child in Grade One is invited to open his or her own private Internet account) is "to make technology a vital part of life in the classroom...to really integrate technology into the school day -- into how kids communicate, how they think and how they learn" (Dwyer, 1996, p. 40). Michael Maser, co-founder of the Virtual High Learning Community (a nonprofit private school in Vancouver) reports in the same article that "We don't even call our teachers 'teachers.' We call them learning consultants. And we don't like to be called a school. We think that is a throwback to an archaic age of corralling young people and imposing a curriculum on them" (p. 42). A private school in Ontario was able to negotiate a half million dollars worth of high-tech computer hardware from IBM "by agreeing to be used as a test site for tours and promotion" ("Half million dollars," 1996,

p. H5). Schools are encouraging children to 'thumb a ride' on the information highway and learn on-line.

Overall, there appears to be little discussion focused on the quality of learning and knowledge on and in the screen on the professional knowledge and school landscape, but there appears to be an increasing intensity of computer use on these landscapes.

Part C. Framework

Conceptual Framework

I am, like the philosopher Heidegger, assuming the world is present before my reflection begins. Of the truth and nature of the reality of that world I am not so sure. I think media technology changes perceptions of that world, that it can and does act as a mediator, and, in this way technological change has cultural, social, and educational consequences. Heidegger (1977) asks what is at the primary center of technology, what is its' essence, and what is its "saving power." He cautions us that if we do not address these questions we will lose "the safe keeping of truth." The "saving power" of technology is not found in the tool itself. Heidegger believes that technology itself is a distraction, and takes us further away from connecting with, and coming to know, the truth. For Heidegger, how we access information in a computer culture not only changes but restricts what we have access to.

With computer technology, and for the first time in Western culture, symbols are not grounded in a frame of reference to include others' geography and history. Heidegger concludes this difference is a critical difference as variable multiple contexts are seemingly available. He believes we will lose the true source of context, and in this way we lose our ground-- the metaphysics of presence, and our way in the world. We will come up empty. He is suggesting that only in knowing something of the essence of

computer technology and how we experience it, will it reveal something about what is it meant to be used for, but it will not reveal truths. On the other hand, the philosopher Bernstein refutes Heidegger positioning his argument on the 'horns of a dilemma.' He proposes exercising practical wisdom as an alternative to Heidegger's either/or choice (Raskin & Bernstein, 1987).

The philosopher Kant (as cited in Barrett, 1986) understood the process of making "legitimate or meaningful concepts" (p. 78) as developing through some form of concrete intuition. Intuition followed by thinking begin "from sensory experience, that intellect is originally rooted in the sensible world" (p. 79). Without these concrete intuitions that "make some kind of mental picture of the concept," thinking is "empty and the words we use merely empty verbalisms" (p. 78). Exploration along these lines culled fine-tuned and not so fine-tuned, far-flung, and eclectic documents.

The way our minds work has changed dramatically over several thousand years. So have the ways in which societies structure themselves" (Dyer, 1996). According to anthopologist Claude Levi Strauss (1963) the binary system structured language in Western cultue, and in turn the language, thus structured, becomes the both the context for and the mediator of consciousness. The philosopher Kant (as cited in Barrett, 1986) further speaks of the structures in the mind as mediators of consciousness. The concept of different ways of knowing led to a consideration of their attendant modes of consciousness. And it seemed relevant to contrast a culture embedded with technological media mediators to one without technological medium mediation. The contrast provides a context for considering questions such Kant's mediation of consciousness and Heidegger's; is [digital] technology taking us farther away from knowing the truths?

Western culture is founded on "rationality, linearity, progress and control" (Cherryholmes, 1988, p. 11). Knowledge claims have traditionally been based on

scientific methodology which has, in turn, produced universal laws and objective foundational truths about reality. The scientific tradition located foundational narratives in the real world; their relevance and validity established in the 'truths and consequences' of the real world. Most recently, the structuralist, poststructuralist, and postmodernist perspectives have questioned the validity of foundational, or metanarratives.

The postmodern position views all narratives as relative, "just another narrative, a social agreement constructed by the participants in a particular 'conversation' (Gough, 1995). This position renders modern foundational metanarratives "incomplete, time-bound, interest-relative, ideologically informed, and shaped by power' as any other narratives" (p. 12). Structural or poststructural methods are often used to look at the systemic context and within the particular system, the constructedness of the narrative.

Post-structuralist writers theorize that texts and their distributional changes occur "along lines indicating how such [technological] changes have been accompanied by [text and distribution] changes in modes of subjectivity and identity formation" (Peters & Lankshear, 1996, p. 4). This perspective positions technological change alongside changes "in modes and identity formation." Historically, technology does not drive these changes, rather these "deeper changes" occur along with technological changes. Neil Gough (l996) writes that the poststructural position shares the view that the meanings we bring to reality are social contructions and therefore do not exist independently of how we have perceived reality. Narratives are constructed in Western culture along the fault lines of our perceptions, as it were. The structuralist would explain the stories elements, and meanings that make up this narrative, in terms of other, past stories. And therefore, any study of a narrative is in itself a narrative construction. The focus here is on the system's construction.

The postmodern perspective repositions the subject ("I") in relationship to the 'gaze' of "The Other" such that one is defined by the other and the idea of socially constructed impositions (positioning an "I" in relationship to a "We") within a historical context is not relevant . Historical, foundational narratives are to be deconstructed, not constructed. Currently, the postmodern perspective looks at the "I" in relationship to the self, that is, the preformativity of the individual in creating themselves. This repositioning and reframing implies that there is no baseline, no fixed ground, and possibly there are no universal foundational principles for either the 'fictional' or the 'real' world. The nature of reality itself is considered as another text, and the realities are thought of as unique, relative and equal. Seen from this perspective, digital technology, with its capacity to seemingly cut 'reality' from its moorings and set it adrift, is definitely a tool for the post-modern world. We could even wonder about their respective influences on each other.

Both structuralist and post modern positions are contextualized by a Western literacy tradition and, with all of these positions, the assumption can be made that humans ascribe meanings to their behavior and persist in telling their stories. How they tell their stories, and from what perspective, are variations within the Western literacy tradition. That Descartes' thesis "I think therefore I am" separated the Western mind from the body in a short five words, and that his influence still pervades as one of the most central of Western thoughts, is by no means irrelevant; only that what is of particular interest is that its meaning is contextualized by the Western literacy tradition.

What is the emerging narrative of this new communications technology appearing on soical and educational landscapes?

Narratives

The narrative nature of media text led me to narrative inquiry researchers Connelly and Clandinin (1990). In their view, in looking for the narrative, we are engaged in:

> the study of the ways humans experience the world. This general notion translates into the view that education [and educational research] is the construction and reconstruction of personal and social stories; teachers and learners are storytellers and characters in their own and others' stories. (p. 2)

In their narrative inquiry work, Connelly and Clandinin refer to "social landscapes," "shaping the professional knowledge landscape," to people living "storied lives" on various cultural landscapes.

Like Postman (1996), they, too, ask what is the relevant story to live by as an educator. This research did not use narrative inquiry methodology, however, it does draw on some of its concepts and language. The research inquiry can be thought of as exploring the narrative emerging on the new technologies frontier. A central question that emerges from this approach is what kind of narrative, or "shared story of knowing," is being told now by the meanings we are bringing to digital technology?

The Western mind set or mode of consciousness will make certain kinds of meanings which in turn will have certain consequences (both conceptual and otherwise), whereas another mindset or mode of consciousness will have different meanings. While there is no guarantee that thinking leads into an intelligible world, it does organize, reorganize, and synthesize the sensory world; and while "the computer certainly does not guarantee deeper comprehension, greater subtlety of mind, or a wisder range of imaginative reference. . . .the mediation of a computer, however, puts new powers at the disposal of intelligence" (Starr, 1983, p. 153).

Educators and their students are engaged in a form of 'oral creation.' People tell stories that are meaningful to them. Framed from within a Western context, telling

stories could be seen as an on-going dialectic process. In a Hegelian sense, I have my story, you have yours, and sometimes we share the same story. I as storyteller may or may not be looking for a synthesis. Heresay has it that if one person shares a fantasy he or she is called psychotic, if two people share a fantasy they are lovers, if a couple of hundred people share a fantasy they are a cult, and if most of us share the exact same fantasy, that is called a culture (anonymous).

Unlike the Western perspective, stories from the perspective of the Native oral traditional are always circular, with both storyteller and listener positioned at the center. The two perspectives connect to different contexts on many levels, and are structured and framed differently.

Bricolage

Turkle's work introduces the descriptive metaphorical language used in further developing the conceptual framework. In researching children's experiences with computers, Turkle (1995) in *Life on the Screen: Identity in the Age of the Internet,* observed their relationship to the computer, method of accessing information on the Internet, relationship to the virtual reality they experienced in cyberspace, and their ideas about their identity in relationship to themselves in this new context. She speaks of their adeptness at "bricolaging" (as in tinkering) on the Internet, their experiences "cycling" across digital boundaries, and their development of "multiple sequential selves" in cyberspaces.

Liminal states

A key concept came from Dr. Paula Gunn Allen's research on the Native oral tradition. In contrasting this tradition to the Western literacy tradition, Allen (1995, 1996) describes a form of "non-inscribed literacy" that is not linear, spatial or temporal, nor product-oriented. Central to her discussion is the key concept of "liminality" (see

Definitional Framework). Liminality is a core concept that manifests itself throughout all Native traditional oral narratives, and it is a narrative in itself. I found Allen's description of liminality similar to Turkle's description of bricologing, but keeping very much in mind that the concept of liminality is deeply embedded in a cultural context, whereas the term bricolaging, as used by Turkle, is limited to an activity associated with a machine.

It is the concept of liminality that offered me a way into 'reading' the narratives of digital technology and virtualizing text.

Definitional Framework

Technology

The term technology is used in its broadest sense and has a two-fold meaning. It refers not only to the physical tools and scientific know-how but also, most importantly, to the ideas which allow for the technology's development. and use of the former. Computer technology involves the student in a particular pattern or process whereby learning is organized in relationship to a digitally programmed text.

The Internet and Cyberspace

I make a distinction between the Internet and cyberspace. The Internet is the hardware, and the World Wide Web runs on it. We use computer programs on the Internet to access information and for communicating. The Internet, albeit accessed by "tinkering" or bricolaging, involves a reading activity as practiced and understood by the Western literacy tradition. The Java computer program developed by James Gosling (originally from Calgary, Alberta) facilitates the Internet's "cross-platform ingenuity" in accessing the World Wide Web's electronic library. Gosling goes on to comment that

his Java program has "taken on a life of its own. . . .the universe has taken over" ("Java Takes Over," 1996, p. G3).

Although both the Internet and cyberspace share the same screen and we access them in the same way, I think of cyberspace as a new medium with a different intentionality, approach, set of rules, and even mode of consciousness because we go into a cyberspace. "Cyberspace" was coined by science fiction writer William Gibson who saw this space as a 'real' space in the computer screen, a virtualized landscape of ultra complexity and mystery that 'plugged into' the human brain, manifesting a new "social imaginary." Gibson's work:

> actually created a social space, organizing the desires and intuitions of people operating in the widely disparate fields of journalism, law, media, psychedelic culture, and computer science," and thereby "information fantasies...entered social practice." (Davis, 1993, p. 586)

The cyberspace involves new interfaces between human and machine, a new world, but one which basically follows the rules of three dimensional space. It is also a non-representational 'space' that groups use for aesthetic expression. Cyberspace, as a virtualizing landscape, is a collective process that can verge on the ritualistic.

Participating in a cyberspace environment involves a different kind of activity and introduces a different kind of 'reading' or literacy. The traditional Western literacy mode of consciousness does not really fit here. In cyberspace we are involved in creating our own animation (both one's own and the virtual landscape's), while experiencing a simulated environment.

Literacy

I think of literacy as understanding the true essence of the media message in the texts. And I assume that there are attendant modes of consciousness for reading text. For these reasons, the term literacy is meant to be understood in its broadest sense,

to include all forms of reading text, whether off the page, on the page or in the cyberspace screen. In the most current edition of the Oxford Dictionary (Simpson & Weiner, 1993-1997) all forms of media are defined as text. I think of text as the stories on the landscape and the process of telling the story as narrative.

We have historically experienced text as image, spoken, written or inscribed. The new techno-digital literacy involves reading hypertext which is digital, hyper reality which is virtual, and hyperspace which is cyberspace.

Functional Literacy

In contemporary Western culture, functional literacy is thought of in terms of 'print' literacy, that is, the ability to read, write and compute. For example, literacy is defined by Statistics Canada as "the information processing skills necessary to use the printed material commonly encountered at work, at home and in the community" (Statistics Canada, 1991, p.14). Statistics Canada also states that "technology has changed so dramatically that previously acceptable standards of literacy are now too low" (p. 81).

Cultural Literacy

Cultural literacy is presented by the International Reading Association (1989) as a literacy that "introduces young people to the major ideas and ideals from past cultures that have defined and shaped today's society" (p. 38). This description presents literacy in a direct relationship with culture, and literacy therefore becomes culturally relative. It can be thought of as a force which binds members of a community together in a way that is determined by cultural values. Literacy, that is how one is able to read the text, means different things in different cultures. And different forms of literacy require different means and modes of consciousness.

Media Literacy

Insofar as media literacy is about 'waking up' and 'getting out of the media story' in order to find and make our own connections and resist those others make, one does not teach media *per se*. Rather, we are inquiring into the social constructions imposed and sanctioned by mass media, and is concerned with questioning a hidden curriculum in relationship to power, freedom of choice, who benefits, etc. and other control issues. In teaching media literacy, we are addressing cultural literacy and the particular mode of consciousness required to read this text.

Critical Literacy

Critical literacy implies that "standards or criteria exist on the basis of which we may distinguish critical conceptions and practices of reading, writing, or viewing texts from non-critical or a-critical literacy's" (Peters & Lankshear, 1996, p. 54). For the purposes of this research, I am interested in critical literacy as it relates to a dialogue on the constructed process of knowing in relationship to digital text., in literacy as social practise and pedagogy.

Modes of Consciousness

I am assuming that "Consciousness is the meeting ground between inner and outer reality" (White, 1974, p. viii). How the meeting ground is perceived, and how this is communicated, is of interest here. Allen refers to an "orality mode of consciousness" with respect to the oral tradition's means of communication and how its text is 'read' and to a "literacy mode of consciousness" with respect to Western culture's means of communication and its written language literacy tradition. de Kerchove (1995)

refers to Western culture's literacy mode as "selective" and "specialized" and the oral culture's mode as "global" and "comprehensive."

The orality mode refers to the mind set and discipline of being able to 'read' the formal literary elements in its basic paradigm -- the oral narrative structures. Referring to a Native oral tradition does not mean the 'text' or narrative is never written down. It can and does get written down, but will read differently from Western literary text. The concept of liminality is essential to reading this text.

Liminality

From the oral tradition perspective, being in a liminal state describes a transformational form of relationship that involves being positioned at the crossing between worlds whose perceived real and virtual boundaries are shifting, crossing, disappearing and reappearing. One is in stasis while 'being' on the threshold, "in the instant that a balance is struck between two ways of being" (Allen, 1994, p. 225).

Thematic Framework

It is reasonable to assume that a new way of accessing information may bring a new way of knowing. Digital and virtualizing communication technologies do involve a new process in contrast to reading the printed page. It does not necessarily follow that being in this new process brings new knowledge, nor new understanding. However, it may bring with it its own mode of consciousness. If this is so, is Western culture developing a new narrative in the process? Neil Postman (1992) illustrates this in his book *Technopoly: The Surrender of Culture to Technology*. He writes:

> The computer is almost all process. There are, for example, no great 'computerers', as there are great writers, painters, or musicians. There are great programs and great programmers but their greatness lies in their ingenuity in simulating a human function or in creating new possibilities. (p. 118)

Here the emphasis is on process, simulation and the "submerged" narrator. These are the themes that are explored and this is the thesis thematic framework.

The thematic plot questions how in cyber culture our mode of discourse is changing, and it also questions the possibility that if the mode of discourse is changing, does the mode of consciousness change as well? If this is so, is it developing a new narrative in the process? Literacy and language theorist de Kerckhove (1995) claims the impact the "technologies of language and writing" have as a kind of "software that predisposes us"; a submerged narrator as it were. In fact, de Kerckhove believes that Western culture's "cyber-electric environment" is predisposing it towards becoming an oral culture, and that electric image-based digital culture is constructing a return to oral values and their dominance.

If de Kerkchove's observations about Western culture's new "cyber-electric environments" transforming Western print based culture to an oral culture ring true, in any way, then looking at the traditional oral culture's particular way of knowing and mode of consciousness definitely bears further investigation. A mode which is used to 'read' what is in a landscape that is traditionally virtual may tell us something about 'reading' a landscape that is becoming virtual, as Western culture constructs cyberspace texts and discourse in computer technology's 'virtual' domains on social and educational landscapes.

CHAPTER THREE

Ways of Knowing: Off the Page, On the Page

> In a country with an oral memory, there are necessarily those in the group who have a vast knowledge because of their age, because in those countries age means library. ...Do you realize the quantity of books an African man of my age has? Here in the body, not just in the memory. In the body. (Freire, 1978, p. 13)

There are different ways that human societies access text, shape it, frame it, transmit it, and ascribe different meanings to it. The 2,500-3,000 year old Ourobouros serpent image symbolically illustrates the relationship between scale and perspectives in framing and shaping different ways of knowing. The serpent, when framed one way, seems to reveal the serpent swallowing another serpent's tail. Reframed by enlarging the frame, and thus from an enlarged perspective, we see the serpent is, in truth, swallowing its own tail. The reality has not changed, or has it? Seeing is believing, or is it?

Historian, writer, and reporter Gywnne Dyer (1996) speaks of consumption, education, and in particular of media, as historical evidences of the reframing power of "mass forces." First appearing in the West, these mass forces reframed and, in doing so, transformed Western culture. For Dyer it is obvious that the power of mass media facilitated mass culture. At the very least, contemporary media technology is reconfiguring communication systems, re framing and redirecting our relationships to digital text and technology. No longer two-way, communication is now multi-directional. For the first time in Western history, digital mass communication systems are both figuratively and literally 'alive' with the voices of anyone, from anywhere.

For de Kerchove, the mass media force of digital technology is reshaping a completely new way of "dealing with human resources, a globalization of human communication" (McKay, 1995, p. D7).

Different Modes of Consciousness

William Irwin Thompson (1981) write's in *The Time Falling Bodies Take To Light*, that "research into the origins of language is really research into the origins of consciousness" (p. 84). The physicist of the scientific revolution Johannas Kepler remarked that the language of the physical world is mathematics. In researching the origins of the distinct language and literature of the Alberta prairie landscape, both oral and written, George Melynk (1998) comments that anthropologists refer to alphabet-based cultures as "low context cultures" because their meanings depend upon linguistic structure and organization, unlike that of the oral "high context culture" where meanings are dependent upon their social context. Language gives us a culturally specific mode of discourse.

Gough (1996) thinks it is essential, but asks if it is possible, to completely shift perspectives such that we are able to reposition ourselves outside our particular mode of consciousness, that is, a particular "cultural discourse or practice," in order to actually see, experience, and then describe that discourse or practice. Such a repositioning requires a capacity to reframe and enlarge perspectives to accommodate different ways of knowing. Yet this is what Allen (1994, 1996) claims to do in researching the Native oral traditions' spoken language literature in order to document and describe its discourse and practice, its text and narratives, and its way of knowing, for Western discourse. She further claims this is what Native students must do when they enter into the Western literacy tradition and mode of consciousness in grade school.

Off the Page

The Orality Mode

As a First Nations member and researcher describing the oral tradition, Gunn-Allen describes a mode that accesses information by bricolaging. It is a mode that is familiar in virtuality and on virualized landscapes, and dependent upon the social context for meaning. In coming from a Western literacy tradition, this is not a mode I am familiar with.

Some of us are required to learn different modes of consciousness, some choose to, and others never do. While some may retain in their early memory banks remembering a time without written text, I learned, seemingly from the beginning, that letters, then the words on the page, were where stories came from. I was inducted into my culture's narrative, and thus my early world views, by being read to at a very early age. This was quickly followed by being taught how to read a written language by experts, letter by letter, line by line, on the page. In this way, I learned to read the text of my culture exclusively from within a Western literacy mode of consciousness.

Unlike my experience, Paula Gunn Allen's first six years were spent listening to stories. She learned exclusively from within an orality mode of consciousness. Her induction into her culture's narratives, teachings, and world views, were through demonstration, storytelling, and spoken language. The contrast with another way of knowing came when she entered public school. Here, she was to learn how to develop, unlike myself, the resources and capacity to use two modes of consciousness, the literacy mode in school and the orality mode at home. She was to learn how to become inclusive, in contrast to my exclusivity.

The modes are very different, and the learning of two modes is difficult, so different and difficult in fact that Gunn-Allen claims Native children in school often become "schizoid and some even suicidal" when an orality mode of consciousness is not

acknowledged (P. G. Allen, personal communication, February 7, 1997). William Barrett (1986) underscores Allen's observations when he writes:

> We are surrounded by a life larger than ourselves, of which we are an intimate part. Suppose out of a moment of theoretical austerity, seeking to commit ourselves only to the minimal theory, we strive to consider those close to us "as if" they had no minds and were not conscious, but were only bodies. We would very shortly be schizoid, deranged. (p. xiii)

The Western literacy mode I learned constructs meaning from text that is analytical and uses the mental realm, is continuous in a temporal time sense, and linear (not circular) both developmentally and logically. Traditionally, the narrative trope (pattern or form) depicts the advancement of an individual in a reasonably straight line, as in a linear plot structure. In developmental terms, he or she will move from youth to adulthood, from error and confusion, towards truth and clarity to stability and integration into society. As reader, I am positioned as one who is becoming progressively informed in a particular way. There is less room for interpretation for the reader in this position. For example, the following account of the Native creation story "The Battle of the Seasons" is more Western and literacy based when written down this way:

> It was agreed between the late combatants that, for all time thereafter, Mi-o-chin was to rule at Kush-kut-ret during one-half of the year, and Sh-as-chock was to rule during the remaining half, and that neither would molest the other. (Allen, 1994)

In contrast, the following is the same Native creation story but with an orality-based traditional translation. The orality mode constructs a more indirect relationship, and one that leaves more room for interpretation:

> Then in the north they arrived. In the west they went down. Arrived then they in the east. "Are you Here?" Remembering Prayer Sticks said. "Yes" Summer said. "How is it going?" Summer said. Then he said, "Your daughter Yellow Woman, she brought me here." "Eh. That is good." Thus spoke Remembering Prayer Sticks. (Allen, 1994)

The Battle of the Seasons would continue with many elements organized alongside the movements of the participants and their relationships to each other. Events would be sketched in only as they pertained to the axis of the four directions (North, South, East, West), and the ritualized seasonal divisions of the year. Such a narrative cannot 'jump' across cultures without its cultural context and content as the person must listen to the story with certain information about the people involved, and be aware that relationships in the context of their ritual significance are being delineated here. This is indeed a high context culture.

The Orality Mode: liminality

Neither time centered nor necessarily setting centered, how the tale is told, a tale which never really ends, has more to do with a loose coherence of common understandings derived from ritual traditions and cultural teachings that members of a tribal unit share. Meanings come from the whole. One is positioned in a liminal state in the centre of the universe. Here, which can be anywhere, is where the four directions both converge and diverge. This is a position that requires balancing. This is where objects, spirits, events, truths, realities, all co-exist within the open ended axis of the four directions. One is always positioned in such a way as to take on more, and contribute to more, in relationship to the whole (Allen, 1997). This is a divergent pattern, and one that opens up to a multiplicity of possibilities. The orality mode of consciousness is non-reductionist; it "adds too" in contrast to dividing up, to get to fundamental meaning. In this way it is engrammatic. Engrammatic thought brings image and concept together, it does not *represent* reality; it *is* reality according to Allen. Reality is more than physical; it *is* this truth (Allen, 1997).

The narrative on the social landscape is perceived and 'read' as an all encompassing matrix of all the stories of a community, and would deal with natural,

human, and spiritual worlds. A common teaching and central theme is "we are here now prepared for community" whatever that (with respect to identity and self) may require (Allen, 1997). Positioned at the center is the story (not the ego). The context is the universal and all circulating stories, both literally and figuratively, 'end up' embedded in and connected to the spiritual world. This is the model. In contrast, the Western narrative traditionally moves from A to B, its context is situational, and it is usually embedded in the personal and material world.

In the oral tradition, the story structure on the social landscape becomes the patterning for the individual. The pedagogy for a traditional Native orality-based curriculum would be different from the Western literacy tradition. In the Native oral tradition, children are taught through demonstration and engage in "tag-along" learning:

> You are literally embedding patterns within the nervous system so what children are learning to do is read, write, think, talk, walk, act, eat, sleep, die within a social framework that the stories reflect so that there is no real division between the human person in the social setting, in the story, or in the information setting. (Allen, 1997)

This is different from the Western paradigm which maintains separate settings on different social and educational landscapes. From the Western perspective the different forms on a social setting are to be contracted with, and may be constructed by an individual as well as inherited with respect to a particular identity. Whereas in Native oral traditions, Allen (1994) writes,

> ritual, and narrative traditions, identity loss, identity development and more than one transformation in identity over a given character's lifetime play a major role. Often the identity of several characters shifts from one category to another, in the course of one narrative or "dance" instructing us that permanency of identity is neither basic nor even necessary to orderly human existence (p.16.).

The students of the oral tradition are positioned in the center of a narrative involving both real and virtualized landscapes and "shape shifts," depending on what the circumstances call for. The story will reveal a set of blueprints for a world where the

geography is not mapped. The student must intuit a direction from a range of possibilities. Negotiating and navigating 'fictional' and 'real' world possibilities, multiple situations, characters and events may call for several different aspects of the self to come forward. A multiplicity of Self is the norm.

Accessing Oral Text: the pedagogy of bricolage and liminal states

Accessing the oral text is similar to the pedagogy of bricolaging insofar as there is an infinite web of multi-dimensional interacting cycles affecting one another, stories within stories, a story that never really ends. In order to access information, members of the Native oral tradition must navigate and negotiate interchangeable and often parallel worlds and cross many boundaries. Possibilities present themselves in multi-layered situations and landscapes, with multiple characters, realities and worlds, all within the overall context of the cycle of life itself. That which is not negotiable is contained in the sacred teaching texts or Ur texts (Allen, 1997).

In both metaphoric and symbolic form, the narrative reveals itself in parallel worlds or realities. It stands to reason that the most important concept in this narrative tradition is the core concept of liminality, a concept that deals with boundaries and boundary crossings. Allen (1994) describes the narrative's context as follows:

> The question of identity and of the boundaries of consciousness and race permeate all First Nation's texts, relating them securely both to the tribal tradition from which they spring, and to the larger American world in which they exist...fluidity of identity implies fluidity of every kind of boundary and while boundary crossing is fraught with dangers, Native narratives highlight the even greater danger of fixing those boundaries. (Allen, 1994, p. 16)

According to Gunn-Allen, liminality is a state where everything is happening and nothing is happening, a state that is full of potential possibilities. In this state we are balancing being neither in stasis nor in flux, neither either/or. This state holds 'both' of anything and all 'ands'. It holds everything and all boundaries. Allen (1994) reports

that "liminality, literally a state of being on the threshold, is the most common theme in the native narrative tradition" (p. 11).

Liminality is being positioned in a balancing state before moving in a direction and into the nature of a different reality. In coming out of a liminal state by making a directional move of some sort, the Native student is not coming to a resolution in the Western sense; rather, the move or act (ritualized or otherwise) is regarded as a form of transformation, and as "intrinsic to life" (P. G. Allen, personal communication, February 7, 1997). Allen (1996) offers an analogy:

> Its like the black and white squares on the chess board. You run structures and patterns on those squares which give you at least three dimensions. Then you recognize that the white spaces and black spaces are interpenetrating of one another, and not actually linear. All is spirit or all is material. It doesn't matter which one you say. Both are true as they mutually form and inform one another. You can't have the one without the other. Masculine/feminine, true/false, spirit/material, born/made, matter/anti-matter, on/off, yes/no, 1/0, good/bad, up/down, right/wrong. Yes, these are constructs but they are constructs in terms of how the universe works. (Allen, Sept-Oct. 1996)

The liminal state is a 'fluid' potential to move among many directions. While the liminal state is, "in the instant that a balance is struck between two ways of being" of a myriad of other states of being possibilities on different levels and in different dimensions, the post liminal state has committed to only one (Allen, 1994. p. 225). Choosing a direction means crossing a boundary into a stabilized state.

The process of accessing oral text is similar to accessing digital text. In both processes we are engaged in bricolaging. However, the concept of liminality and, in particular, its context is in juxtaposition to the Western literacy tradition. Western literacy position us in a dialectic that requires a resolution of conflict and the overcoming of a problem. The Native traditional oral narrative does not use conflict resolution to overcome a problem, individualism, or causal relationships as defining characteristics. Aboriginal scholar Leroy Little Bear, of the University of Lethbridge, in an interview with author George Melynk (1998), observes, "We can find in the English way of

thinking a very linear way of thinking. . . . A line lends itself to polarized thinking. . . . But for aboriginal people that's not the thinking process" (p. 2).

Whereas 'becoming' is a central concept in the Western literacy tradition, "being" (in a liminal state) is the central concept in the native narrative.

'Reading' the Oral Text

In learning to read this text, one is inducted into a process of connecting with a particular community-at-large and developing a personal story in relationship to that community. The personal story is understood as the 'history' of the community and vice versa. Although its texts can come from anywhere in any form at any time, the mythic teaching and ceremonial dance texts cannot be 'made-up,' or changed. Ur texts, the formal sacred oral/ceremonial teaching texts, are rigidly codified and rule-bound. These texts contain formal literary elements (symbols, illusive systems, metaphors, etc.) structuring the story and composing the narrative and must follow formal rhetorical conventions. The narrator will follow the requirements of the particular Ur text being performed, down to its specific syntax. Rendering the formalistic components-- tone, pace, action -- impacts the understanding of the mythic narrative or the ceremonial dance text.

Derrick de Kerchove (1995) observed that "the presence, the energy and the reputation of the speaker" (p. 107) in the oral tradition are paramount. Gunn-Allen (1996) puts this observation into the Native oral traditional context with respect to its unspoken meanings and intentionality. According to Allen, the storyteller is the one who is held accountable to the story, to 'get it right.' This is a sacred trust. The storyteller is the keeper of the process, and such is the nature of the transformative process. The 'audience' already has some information about the people involved in the story and are aware that relationships within the context of their ritual significance are

being delineated here. The way the story is told, the narrative in other words, will not be historical, factual, nor deal with rational literal processes, but it will be known and understood as the truth.

Context Off the Page

According to Allen (1997), the Native oral tradition uses the language of myth (p. 84). Native 'history' is embedded in the earth (which holds all human 'history' in the blood of the ancestors), which then becomes ritually and literally reintegrated into the pattern of the life cycle. In this way, the reality of the landscape is open to a multiplicity of relationship possibilities, virtual, spiritual, material or otherwise. In this way, what happened 200 years ago is present today.

Dealing for the most part with non-representational, unconscious material, stories flow back and forth through time and space and along relationship lines to maintain their continuity, sense of immediacy and purpose (Allen, 1997). A causal, logical answer to a direct question in a story makes no sense when meanings come from relationships that are not direct, cross temporal and spatial boundaries, and furthermore, circle round as does the story. Meanings, rather than answers, are up to the individual listener to elicit. Seldom will there be a direct answer to a direct question (Allen, 1997). The mythopoetic as the normative structure is incorporated into the culture as part of the culture's social fiction. This narrative's view of the world is dynamic and charismatic.

The intentionality of the narrative is to teach a holistic mode of consciousness, a way to deal with life in more than one dimension. "Muchness" is the way Allen (1997) describes this: "All is here. Here everything is related and always present in every which way." Meaning is assumed to be total, regardless of where one is in this muchness. The narrative pattern is divergent, but contained within a whole.

From this holistic world view, the past is construed not simply as the past, nor is the future simply 'not yet,' but in essence both come together and are integrated in the present. All specific and non-specific events are present. In this context, any given space at any given time is known to contain all there is. This is a metanarrative that assumes that there is a level of text that goes well beyond the remembered subject, holds both the personal and collective unconscious, the personal and the transpersonal, and is eventually, always, connected to the spiritual.

On the Page

. . . translation was never possible
instead there was always only conquest
the influx of the language of hard nouns
the language of metal
the language of either/or
the one language that has eaten all the others...

(Marsh Languages, Atwood, 1995)

The Western Literacy Mode

George Melynk (1998) in *The Literary History of Alberta, Volume 1*, writes about the need to seriously consider that the voices of the Native oral tradition "speak to us with differing understanding. It is not their speaking that is problematic-- it is our listening" (p. 18). He refers to the Western literary tradition of privileging the written and goes on to argue that 'reading' the image and listening to the spoken text of the oral tradition are necessary to "opening up the literary imagination" (p. 18). According to de Kerchove, the oral listening mode is attentive to context and people, "cosmo-centric and spatial," while the Western literate listening mode is attentive to words and verbal meanings. It is "linear, temporal and logocentric." Michael Heim (1993) uses the metaphor of "nesting" to describe how (in the Western literacy tradition) the book, the

classroom, and the larger curriculum fit spatially into one another "like a series of Chinese boxes" (p. 16). The organizing principle at work here is the enclosed grid-like, left-right, top-down, beginning-end, orientation (Bolter, 1991). The grid 'maps out' a prescriptive educational space that facilitates the normalization of the student.

Heim (1993) goes on to suggest that the required mode of consciousness based on this model is also "enclosed," that is, predisposed to convergence rather than divergence, in that it is organized spatially to converge to fit specific "cultural norms and preferences" (Bolter, 1991). The traditional Western literacy mode deals with some form of heroic individualism and a Christian motif of good and evil in confrontation. Implicit within this core thematic narrative is a structuring that suggests a need to compartmentalize, individuate or isolate, to get at a central singular point, a fundamental meaning, in order to bring about resolution (Allen, 1996). A convergent pattern emerges from this structuring.

Regardless of whether one views this pattern from the perspective of construction or deconstruction, the Western narrative will always have 'payoffs' (objective and subjective), lessons, rewards, beginnings and endings. There will be a finality about this narrative, a conclusion or resolve, a winner or loser, a 'wrap-up,' an ending. This is the normative model for stories on the Western landscape.

Contemporary Western literacy offers a postmodern perspective, that is, a self-exploration with a narrative voice that is deconstructed to reveal it. This perspective involves an I in relationship to and under the 'gaze' of "The Other." In this positioning the self guarantees its own reality and accrues its warranty through the gaze of The Other. We explore the relationship of self to its image of self with its "infinity of reflection." This presents the notion of the self as a fictional construct (Lacan, 1977. p. 3). When it is the mirror writing the self, writer Margaret Atwood (1994) reminds us that with a mirror, the focus point is the image reflected in it:

> As with any magician, you saw what she wanted you to see; or else you saw what you yourself wanted to see. She did it with mirrors. The mirror was whoever was watching, but there was nothing behind the two-dimensional image but a thin layer of mercury. (Atwood, 1994, p. 461)

Accessing the Written Text

Historically, to be literate originally meant composing and reciting orally (oration). Bearing oral witness constituted a legally valid record in the Western world; and to be literati (educated) meant knowing Latin (Compaine, 1983). The technology of print in the form of the written record came into wide use in England in the last half of the llth century: "before 1400 it was possible to tell with some precision where in Britain a letter or manuscript was written just from the spellings. By 1500, this had become all but impossible" because the printing press provided standardization (Bryson, 1990, p.. 126). Fifty years after the publication of the first Gutenberg Bible in 1455, there were 35,000 plus books published in Europe (Bryson, 1990). The mass distribution of books changed cultural, social, and educational landscapes.

In Bill Bryson's (1990) *The Mother Tongue: English and How it Got That Way*, Bryson describes the two ways of transposing speech into writing: using an alphabet (e.g. English), or a pictographic-ideographic system (e.g. Chinese). Unlike the alphabet, each word in the pictographic-ideographic system has its own symbol,

> ideographs are pronounced differently in different areas but read the same. ...a useful advantage of written Chinese is that people can read the literature of 2,500 years ago as easily as yesterday's newspapers, even though the spoken language has changed beyond recognition. (p. 119) (Bryson 1990, p.119)

Although English had its roots in pictographs, the pictographs were used to represent sounds rather than things (Bryson, 1990, p.126). According to de Kerchove (1995), the orthographic symbols or "ideographic representation of languages" (p. 80) use a different mode or "mindset" from alphabet-driven languages (Melynk 1998, p. 7). For example, in discussing oral versus literate modes, de Kerkchove suggests that there is a

"tyranny of the eye" with the literate mode. He reports that "the visual reading of written text requires eighteen times more mental energy than the listening mode. If you are highly literate, the chances are that what rules your representation of environment is a visual model" (p. 101). However, de Kerkchove further points out that the additional mental energy required to visually read printed code results from the fact that one must be highly selective, obsessive in focus, exclusive, and restricted to "a frontal view."

McLuhan (1965) wrote that the printing press with its moveable type encouraged people to think in straight lines and oriented perception's of the world to fit the visual order of the printed page. We could think of this as a "rational patterning" behind the Western traditional literacy mode.

Reading the Written Text

Little Bear (Melnyk, 1998) refers to "the other aspect of the English way of thinking is that English is largely noun or object-oriented" (p. 2). Canadian wordsmith Margaret Atwood (1995) refers to English as "the influx of the language of hard nouns" in her poem *Marsh Languages*. For Eric McLuhan (1997), "The phonetic alphabet provides a technique for transmitting all of the senses into terms of just one sense which further isolates and intensifies by submitting those other senses." In *Returning to the Teachings Rupert* Ross (1996) also identifies Aboriginal languages as verb-based and reflecting being in a process of constant change.

In *Marsh Languages* Atwood (1995) conveys that nuances are more refined in verb-based languages, that:

. . .the sybalence and gutterals the cave language
tangle together in the ooze
the half light forming at the back of the throat
the mouths damp velvet molding a lost syllable
for the I that did not mean separate
all are becoming sounds no longer heard because no longer spoken. . .

For example, English uses the pronouns us, you, them. In Cree "I" would translate to me and mine, "us" would translate to me *and* you *and* ours, "you" would translate to you *and* yours, "them" would translate to he/she *and* theirs, and "of them" would translate to *and* those beyond he/she. There are no words one could call nouns as there are no words separating an object from the action, or the process it is in; for example, separating a table from the 'flow' of being a table. A speaker of this language would not be able to say "I am sitting at the table". If translated, one would be saying something like the process of becoming myself is in the process of sitting at something which is in the state of becoming a table" (Allen, Sept-Oct. 1996). Ross (1996) suggests that these languages are truer to life as they speak to what is actually happening. We would have to assume that there is a reality independent of us in order to accept Ross's suggestion.

The changing nature of the English language brings with it new forms of expression that disconnect it from the past, and as a result, tie it to "the imprecision of words" (Atwood, 1989, p. 3). This lack of referentiality leaves the meaning of things out 'in space.' English words are more directly and closely connected to other words or concepts than they are to the actual objects they are trying to describe: "the most majestic of dictionaries may appear wrapped in the authority of permanence, but in truth it's the product of many improvisations. Like the language, it's normally in flux." (Fulford, 1998, p. E7).

Atwood (1990) uses the metaphor of time as a series of "liquid transparencies" that we look "down through...like water" to describe this fluid nature and protean dimension of time rather than a collection of points along a linear recording of life's events (p. 3). On a psychological level, Freud gave us the analogy of the "Mystic Writing Pad"-- the recordings of permanent memory traces that are left present in the

unconscious, but constantly affected by in-coming stimuli which, in turn, are being received by the mind's perception.

Furthering the complexity, as scientific and logical fields of inquiry have developed and expanded, they have unified seemingly unrelated aspects of reality and revealed others. This has created even more of a sense of being tied, paradoxically, to the imprecision of words. Quantum mechanics mixed with Chaos Theory has changed the foundational binary concepts of space or time, energy or mass, to non-binary space and time, energy and mass. Empirically verifiable, either/or now can be both/and, and space can be scientifically conceived of as a space without structure and time as out of time. Now natural states are not necessarily distinct but fold into each other in four dimensional space-time energy-mass relationships. The new science of digital technology has been known to be loosely referred to in the popular press as "the fourth" science.

The new narrative, or way of telling stories, does not seem to rest on solid ground. It could be referred to as post modern. The post modernist, in questioning the assumption of a finite or fixed truth, would propose that the reading and meaning of things (determining the relationship between sign and signifier) is not only ambiguous but also negotiable by the subject (the I); who then defines the object (the Other). When the language creates worlds, the self is put in a precarious position. How do we obtain verification of reality? Of the reality of the self? Where does the reality come from? Not only is light relative, is everything else to be considered relative also?

As "rational, rule-bound, linear, progressive, controllable, predictable" borders shift, and in some cases dissolve, traditional Western beliefs, ideas and concepts about the nature of reality, truth, identity, self, Being, culture, morality, consciousness, and authorship are being challenged (Cherryholms, 1998).

In low context Western culture the language uses words that are often disconnected from the reality of the experience. Dislocation between words and their meanings influence the impact of a text 'out of context.' How do we then write the story? From what perspective? Indeed, as Aritha van Herk (1992) suggests, "The only way to survive [is] to verify the content of language, of what [is] said or written, all the time; and verify it not for truth, but for fiction" (p. 47).

Context On the Page

Noun-based European languages reflect an emphasis on the static while North American Aboriginal languages are verb-based and reflect Being in a process of constant change. On the transpersonal level, we could say that this perspective may also be reflected in a Native tradition that views change as constant, and a Western tradition that views radical change as chaos (Kevin Kelly, 1994).

Arthur Koestler (1964) in his book *The Act of Creation* comments that myth is the "narrative of the soul" and "history is the narrative of the ego." Thompson (1981) continues with this theme in writing on Koestler in *The Time Falling Bodies Take to Light: Mythology, Sexuality and the Origins of Culture* . In commenting on Koestler, Thompson further explains:

> The history of the ego, with its succession of kings and empires, technologies and wars, is what we are all taught in school. The history of the soul is obliterate, the universe is shut out, and on the walls of Plato's cave the experts in the casting of shadows tell the story of Man's rise from ignorance to science through the power of technology. (p. 247)

In *The Death of the Soul* Barrett (1986) suggests that the 17th Century European scientist put before "our imaginations: a picture of the universe as a vast and impersonal machine indifferent to our human purposes" (p. 91). With this mechanical image in place Western society put aside the mythopoetic and based its understandings of the workings of the world on logic and scientific methodology. Mastery of these

disciplines will eventually reveal the "theory of everything." Such a theory would identify the categorical distinctions, and hence the building blocks of the universe, and from there deduce ultimate knowledge. Cherryholmes (1988) writes with reference to the positivist way of thinking:

> positivist science can be regarded as an attempt to write a metanarrative of science-- a story or set of rules characterizing positive knowledge. The positivist story attempted to make rules for other stories from its categorical distinctions between analytic and synthetic, observation and theory, linguistic and empirical, and so on. (p. 12)

The pragmatist would go on to say that truths about reality are revealed by their real consequences in the real world. In this way, both knowledge and understanding are possible.

Barrett (1986) argues that Western culture is deeply invested in its science and, in turn, its technology. Gywnn Dyer (1996) makes the point that the Nation State idealizes technology such as mass communication, for this is a technology that can be militarily employed to control Nations populations. Science itself makes no such ideological or useful purpose claims; rather, it is about an essentially reductionist methodology that approaches knowing the whole by understanding its parts (Dewey, 1934, p. 34). "Metaphorically, we can refer to the shift from book to screen in terms of a shift from the geometry of modern Euclidean space to the infinite space of pure information-- cyberspace" (Peters & Lankshear, 1996, p. 61).

Traditional Western borders and boxes are being challenged, and reframed. The mediums for Western narratives are changing as are traditional scientific methods. Western culture is being introduced to the concept of liminality.

CHAPTER FOUR

Ways of Knowing: On the Screen and Into the Screen

Between the idea
And the reality
Between the motion
And the act
Falls the Shadow

. . .The Hollow Men, T.S. Eliot

On the Television Screen

From Analog Mode and Method to Digital Mode and Method

In the article Life According to TV, George Gerbner (1989-90) writes that "for the first time in history children are born into a symbolic world that does not originate with parents, church, or school, and requires no literacy" (p. 7). In writing about reading electronic text, David Bolter (1991) remarks that "what is unnatural in print becomes natural in the electronic medium and will soon no longer need saying at all, because it can be shown" (p. 6). Television programming is called programming because that is its intent-- to program the viewer. It has not been about communication and community; but it has been about a formulistic construction. With electronic image-based text:

> While you watch TV, if your mind doesn't wander, if you don't hold a remote control, the screen images replace your own. You share in the collective imagination and the collective thinking it makes available to you. On television, the images do not come from personal experience, but from the work of a professional production team, often strongly influenced by polls and market surveys. (de Kerckhove, 1995, p. 206)

Unlike an older generation of viewers with well-trained, long attention spans, the younger television viewer is not conditioned to being unrewarded for long. Is the "jump-cut culture" prone to "attention-deficit disorder," or is it some form of 'tension

intolerance patterning' as a result of switching television programs with a remote control? A remote control means that we can instantly escape from a program that we find boring. We can customize the television viewing experience to maximize entertainment value.

Television format has been analog, and analog time is a smooth continuous motion. What disrupts the smooth motion is editing; the "jump-cut" is a video editing term. Young members of television's 'jump-cut culture' may not learn to sustain much interest in the long story, nor wait two minutes to get a satisfying ending. Rushkoff (1996) believes that they are, in fact, learning how to recognize patterns in order to get their bearings. For Rushkoff, what is commonly regarded negatively as attention-deficit television viewing behaviors are, in fact, positive and make good educational sense. He claims that in watching television children are developing appropriate skill-based resources for living in a rapidly changing, chaotic, culture. Rushkoff further claims that the cyber generation has developed a mistrust of the traditional Western linear narrative.

Canadian filmmaker Norman Jewison (1998) informs us that to sustain an interest in the traditional linear narrative the standardized successful film formula constructs the development of the likable character we identify with in the first five minutes, and then follow into jeopardy. The level of tension, in relationship to jeopardy, is raised as high as possible before giving the character a way out. Jewison comments that success in the film medium means using "the formula" to establish the critical ratio needed to provide so many "hits" of tension per so many minutes of film. Most 'meaningful' for the film marketers are the number of sustained "hits" that accrue during the viewing process and that success in teaching the young to be 'ready-set-go-buy' consumer customers.

New digital technology initially interfaced with video. With respect to video games and the computer screen Rushkoff reports in his Cyber culture column that the flickering rate (hertz) from the image flashes 85 times a second. He compares video games to the "electronic equivalent to a dose of speed" ("New Dope on Video Games," 1998, p. C9). In *Cyberia: Life in the Trenches of Hyperspace* Rushkoff (1994), answers McLuhan's question when he writes that regardless of content, the medium will have physical and psychological effects in ways we are only now possibly starting to understand.

Digital time, by its very nature, jumps second to second; there, not there. It's language is a binary code (binarius: Latin "bini" meaning two by two). With digital text, images, sounds and words, are broken down into byte-sized data 'chunks' (into micro-chunks of light) expressed in numbers. The computer program can re-present whatever can be digitized. Anything that can be expressed in terms of a binary code can be re-presented instantly in "digital data packets," be it in the form of e-mail, pornographic images, or sacred music, for example -- whatever, wherever, whenever. Most recently, WebTV combines Internet surfing, hot links and crossover links with television; "streaming video" by sending video clips and screen captures, and the new digitally versatile videodisc (DVD) technology "promises to change the way we watch TV and use PC's" along with its "capacity to hold data on both sides of the disc, ...accommodating two layers of information on each side" ("DVD Changes the Future," 1996, p. F1.).

Digitized images travelling at the speed of light have a built-in propensity to increase the number of ways in which external images can be re-presented. It enables mass media television producers, reporters, and programmers wired to computers and digital cameras, to increase the speed with which they work on the screen. The tightly edited television newscaster who says "give me fifteen seconds and I can give you the

world" is able to do exactly that. (Although it might be more accurate now to now say 5 seconds). Instant information, communication, and gratification, seem to be rising expectations.

Whereas the television culture tends to isolate us from one another, the interactive computer screen allows us to be stimulated by an Other, or a community of Other's from "elsewhere," albeit never meeting face-to-face. It is understandable that the cyber generation will spend much time on-line experiencing this stimulation, this sense of community without the attendent responsibility. The computer positions the user in a "parallel distribution process" and the decentralized nature of the reality is in its individually constructed texts which can be immediately 'grabbed' from anywhere. In this process the 'centre' is always framed by the screen.

On the Computer Screen

Accessing Digital Text: the pedagogy of bricolage

Peters and Lankshear (1995) identify six features of digital text: (a) its "dematerialization" ("infinitely plastic, continuously available, and recyclable"); (b) its breading down the distinction and border between reader and writer (an "interactive reader" participates in developing a non-fixed, highly manipulative narrative); (c) the simultaneous convergence of word, image and sound (no boundaries to separate textual time-spaces); (d) high speed 'alpha-iconic ' text manipulation (the 'across technology' editing of hypertext, and hypermedia); (e) new forms of discourse (the blurred boundaries between on-line formal and informal discourse); and (f) the breaking down of the notion of author and authorial forms of text production and ownership (Foucault, 1983, pp. 62-64). These features are very different from the written printed code. Of particular interest is that all six features involve boundary

crossings, be it in the form of a dematerialization, a blurring or crossing, plasticity or ambiguity, etc.

According to Logan (1996) in *The Fifth Language: Learning a Living in the Computer Age*, digital technology has produced this fifth language, the computer itself. He claims that modes of human communication have moved progressively through cultural stages vis-à-vis specific predominant human "learning a living" activities. He has identified five such modes of communication stages: (a) oral communication vis-à-vis hunting-and-gathering stage; (b) written communication vis-à-vis the developing society stage; (c) printing press (e.g. book) communication vis-à-vis the wider dissemination of information stage; (d) mechanical communication (e.g. telephone) vis-à-vis the instantaneous transmission stage; and (e) the computer (e.g., the Internet) vis-à-vis the enlargement of an individual's immediate access to enormous storehouses of information.

Logan (1996) argues that such changes in communication alter society and its activities. If you alter the method you alter the mode. In turn, these changes must alter educational methods. For example, he argues that specialization is a product of logical linear societies dependent on writing. He claims that specialization will in favor of a computer-driven multidisciplinary approach more suited to an information process that is not linear, an approach that allows students "to think more widely" because they now have access to an enormous storehouse of information. He reminds us that literate society developed the school as a formal institution, and wonders whether schools, as we know them now, have become outmoded in the computer age. Other educators seem to agree with Logan:

> A vanguard of educators from Vancouver to St. John's is plugging into a new generation of electronic wonders...Who needs teachers dominating discussions, they ask, when students can get all they need to know from the World Wide Web? Who needs exams, when the real trick is figuring out where to surf for the answers? In fact, who needs schools when kids can work from a laptop at home? (Dwyer, 1996 p. 40)

Kevin Kelly (1994) refers to the Internet, and its capacity to house ever new Web sites and links, as the "Borges Library of Form", and its characteristics as "Borgian" and "infinite." This is in reference to the Argentinean metaphysical author Jorge Luis Borges. In the novel Labyrinths Borges (1970) uses the metaphor of the universe as a vast library that we do not have a proper catalogue for. The Borgian on-line library is capable of "infinite form" insofar as the number, form, and content, of possible sites are restricted only by our imagination in creating them, and further, that this library's networking and connecting matrix is operationalized on multiple levels. For Kelly, (1994) not only is this 'library' multidirectional; it is animated by its users. Our undertakings in this library of infinite form necessarily bend into, and through, one another an unstable "labyrinthine halls of mirrors."

According to Marshall McLuhan the character of electronic image-based text requires sensibilities that are non-lineal, tactile, simultaneous, reactive, discontinuous, mosaic, and intuitive. The impact is two-fold for McLuhan (1965); content follows form, and new structures of feeling and thought arise out of new communications technologies. Not only does electronic media require different sensibilities, this form of text tells the story by analogy rather than sequential argument (Lapham, 1994). Reading this text requires pattern recognition, unlike the classification and 'boxing' system required to read the printed page.

Cyber-guru Don Tapscott (1998) reports on-line that the "Net-Generation" (N-Gen) is characterized by their acceptance of diversity, their curiosity, assertiveness and self-reliance (www.growingupdigital.com). All characteristics are computer-enhanced according to Tapscott. There is diversity provided by the anonymity of the digital text author, curiosity by an interactive media, and assertiveness and self-reliance by an energized electronic window in which to express one's voice. Along with Rushkoff,

Tapscott believes that adults and educators must "listen to the children" in order to understand the reading of virtualized social and educational landscapes.

Certainly the computer 'surf kid' has no difficulty with a process that provides satisfaction in making connections, in getting "it," the 'ahah' action moment, on an on-going basis. Bioware president Greg Zeschuk (Edmonton, Alberta) points out on-line that "3-D terrain new generation Internet-enabled games for multiple players" are not bought for the story. Rather, they want the action available to them on the 3-D terrain, action that is produced by new "voxel" technology (http://www.bioware.com/pressadv.htm). As Rushkoff also suggests, there appears to be a greater sense of self-empowerment and satisfaction coming from the digitally induced 'ahah' moment than from the traditional Western narrative.

The experience of being on-line in its 'collective phenomenology' is that of a media technology with exciting new borderless possibilities and a capacity to ascribe personal power and freedom. A Western way of knowing that was once authoritative, orderly, and linear, is no longer.

Induction Into the Screen

On Virtualized Landscapes

The screen is no longer a one way, unidirectional relationship wherein we view and it performs. It is now both a window of expression we can step into, a 360 degree interactive media space/environment, and a window we can figuratively step through and literally onto a virtualized landscape. The virtualized landscape is framed in such a way that the real world 'fades to black,' and traditional borders are suspect.

Kevin Kelly (1994) proposes that biologic digital technology has produced the merging of the 'born' and the 'made' to such an extent that a new paradigm has been created. He refers to this paradigm shift in his book "*Out of Control: The New Biology*

of Machines, Social Systems and the Economic World." This technology does not follow traditional scientific methodology; it exhibits the properties of a chaotic system--organic and chaotic, not linear, spatial or temporal. Kelly identifies a new metanarrative authored by the "biologic" relationships developing between human and machine. It is a difficult narrative to grasp for it paradoxically initiates us into the "godhood" of computer simulationists and coevolutionists while debunking the myth that we have control. It is a story of humans moving closer to machine enhancement and machines being engineered biologically. He does concede that the "unexamined consequences of evolution will shape our future" (Kelly, 1994, p. 173). For Kelly, human and machine are merging and co-evolving in infinitely variable and newly emergent systems.

Computer scientist's refer to machines as "learning from experience," computers that "evolve," and therefore "think." From voice-activated computers will come thought-activated computers. In other words, they are seen as "organic" computers by computer scientists such as MIT's Marvin Minsky. With respect to the future of humankind Minsky proposes that the next logical machine/man evolutionary step is "tinkering" with the brain to produce the superintelligent "posthuman," "up-loaded," superman. The kind of control this refers to speaks more to engineering the "made" than to humanizing the "born." This will not be Nietszche's superman; rather, this superman will be technologically (not philosophically nor morally) enhanced. We have seen evidence of this direction manifested in innocuous virtual fish that behave autonomously in the screen, in robots that behave independently and autonomously, and more recently in transplant nanotechnology that behaves organically.

Computer programmers have the technology to create a new interface with body, mind, and microchip. Only in our Borgian-like dreams do we in Western culture, for the most part, have an indication of the vaster dimensions of Being, time and space. Now, however, these vaster dimensions are mirrored in cyberspaces and virtual reality

environments. If the strength of the 'hype' indicates the strength of the force, there are strong forces as work here.

In Virtualized Landscapes

In the virtualized landscape the story is seemingly without origin or foundation; it is "insubstantial, ownerless, a rumor only, drifting from mouth to mouth and changing as it goes" (Atwood, 1994, p. 461). The programmer facilitates the manipulation of an all-encompassing three dimensional fictional reality and a phenomenologically experienced self, possibly autonomously, or possibly in relationship with avatars (a term conjuring up mythical spirits and fictional entities while referring to virtual people in cyberspaces). In this landscape, digital technology can be experienced as an extension of ourselves, our thoughts and feelings, seemingly participating in forever making it up as we go along.

In describing the act of creation Arthur Koestler (1964) refers to this process as mixing matrixes; a process he calls biassociation, for example, that mixes "the professional with commonsense logic, metaphorical with literal meaning, of contexts linked by sound affinities, of trains of reasoning traveling, happily joined together, in the opposite direction" (p. 66). Kevin Kelly (1994) contextualizes this new form of accessing, connecting and communicating relationships in referring to a dynamic "fractile system" exhibiting the seemingly "networking properties of a chaotic system." Digital media techniques imitate the sensation of remote control escape in the process of accessing media objects. I can move the images around seemingly at will. Ironically, what can be experienced as infinite in a cyberspace environment is, in fact, defined and finitely framed by its author, the computer programmer.

With the computer, I control the mouse and additionally can express myself, possibly even create the sensation of transforming myself, if I position myself 'in the

screen' in a cyberspace. I access digital text in this virtualized world using notation and non serial bricolage. In the process of accessing this text I experience the illusion of a discontinuity of data, of images and information, and a seemingly free rein to access and participate in as many digitally substantiated 'worlds' as there are on the virtualized landscape. One such future world de Kerchove (1995) considers probable is "a think tank where the tank does the thinking." He envisions digitally "simulating a complete thought-process environment." In the long run, he goes on to say that, the most important change in accessing this text on virtualized landscapes may be psychological:

> our personal, ordinary internalized consciousness will itself become externalized. The whole external world will become an extension of our consciousness, just as it used to be for the most "primitive" cultures of the planet. This spells not the end, but the removal of Homo theoreticus from centre stage, to be replaced by Homo participans. (p. 49)

When the reliability and authenticity of the narrator are ambiguous, and when the reliability of vision and correlational perception are problematic, then where is 'real life' located in this virtualized landscape? Is there a 'there' in cyberspace? (Barlow, 1995, p. 52). Does the range of experience available depend on which I is available? Is what is available contingent on a particular mode of consciousness? Is it up to the I as defined by the Other? What is the student offered as truth?

Reading the Digital Text on Virtualized Landscapes

> The great precision of a digital code like written language allows a dense mass of meaning to be packed into a relatively small surface area to which the eye is almost inevitably attracted and from which meanings are discharged like a shower of needle points to pin down the ambiguity of images. (Nichols, 1981, p. 63)

Computer programmers are able to simulate, enhance and manipulate any image that has been scanned. Another name 'in the trade' for digital imaging is "reality suspension." Manipulating new and original negatives is common practice, and:

> Increasingly, the imaginary materializes as the replicated and the simulated is captured as an image. This is a world that constructs appearances which act as the reality of surrogates of a Real...not the metaphysics of presence but of perpetual absence. (Fry, 1998)

The growth industry of commercial iconography underscores this power. Words in the Western literacy tradition do not mimic what they signify, but images can, and do. In mimicking the spoken word, they appear to access the real even as they re-present it, "hence they don't depend so much on incarnational logic for their power as on the magic of unspoken thing-ness" (Hoyt, 1996, p. 18). Impacts, consequences, and complexities, take a quantum leap when one considers that electric images:

> aren't perceived as less real, but as more real...something changes when an event gets filmed...Things look whole, they have a lastingness about them...these phenomena testify to a strange but most definite power to confer there-ness, extra-ness, real-ness. All told, the urge to produce and consume images has become so powerful and widespread that it threatens to outweigh language as the defining characteristic of our species. (Hoyt, p.18)

Italian writer, philosopher, and semiotican, Umberto Eco (1990) made a year-long field trip in 1989 to the United States to identify the codes and systems of signification on the American social landscape. He researched the communication system of "simulacra" or simulations in the form of "monuments to fakery;" for example, theme parks and wax museums. In researching how American culture articulates experience and produces meaning he described what he experienced as a "journey into hyperreality." He observed a proliferation of "monuments to fakery" in "the industry of the Absolute Fake." Moving from the real to the fake and into the hyper-real, he saw "unreality offered as real presence." He concluded that what he saw standing on the US frontier of digital culture was the social construction of the reality of the ultimate or "absolute" fake, where "unreality is offered as real presence" with the same force as the search for ultimate truth.

Most critically, Eco cautions that the industry of the "absolute fake" endorses "consumers of promises." He believes that in giving the reproduction iconic status we

no longer want, or feel the need for, the original. Is this what happens on virtualized landscapes? Jean Baudrillard (1988) writes in Simulacra and Simulations that simulated space is the "operational double, a metastable, programmatic, perfect descriptive machine which provides all the signs of the real and short-circuits all its vicissitudes" (Baudrillard, 1988, p. 167). In simulated space nature's permanence is cultivated through "iconic reassurance." In this space we are positioned such that we are 'distanced' and protected from real consequences in relationship to the natural environment. Is this what happens on the virtualized landscape?

Digital technology animates the absolute fake, and machines are anthro-morphized. In the screen, hypertext opens up entirely new possibilities in endless variations for how stories can be read, told, and 'played with;' but where is 'reader' positioned in relationship to the story, and what is the context? In War of the Worlds: Cyberspace and the High-Tech Assault on Reality , Mark Slouka (1996) warns that digital simulation has become so technologically sophisticated that we are losing touch with physical reality and confusing the 'real' with what is not real. Slouka regards a cyberspace 'community' as a "hallucination on a landscape" that is fed directly into the brain, and reminds us that the images are provided for in cyberspace by the programmer, and the framing is done by the hardware.

Howard Rheingold (1995) writes in The Virtual Community that "virtual communities require an act of imagination and what must be imagined is the idea of the community itself" (p. 64). I am in a process whereby I experience programmed digital text in multiple forms designed to induct me into a virtual community. For example, in some cyberspaces, "avatars" (virtualized 'people') populate a "metaverse" (a three dimensional city/landscape). Participants are drawn into a world where displays are 'moving', they are experienced as 'breathing,' and it feels like a 'living' thing. The sensation of movement comes from inside our heads. Externally 'it' (the single frame)

is not moving, rather, it is the spaces in between the changing frames that appear to flicker. Do you actually get to 'touch' breath and spirit in cyberspace?

This is very different process from reading on the page, and develops a much different relationship between reader and text. The virtualized landscape in cyberspace is constructing a new form of narrative that is both personal and cultural. With virtualization we are constantly questioning the "I," and we are constantly looking for a way to reveal the presence of fiction. This is a major shift in the Western tradition. We have gone from searching for truth and reality in the real world to focusing on the presence of fiction and the virtual (Umberto Eco). The postmodernists might refer to this repositioning with respect to reader and digital text on, for example, the Internet as exploring the "amorphous space" between itself (or I) and the 'gaze' of 'The Other.' With respect to cyberspace, the postmodernist would possible refer to this repositioning as exploring the 'preformativity' of the "I," and the I's possible personae's. A 'de-centered' self is distributed into many worlds. On virtualized landscapes are we accessing the multiple nature of the self?

Teachings From the Oral Tradition in Developing a Context For Virtualized Landscapes

In taking the 'pedagogy of bricolage' into cyberspace we need to enlarge our view to bring in the concept of liminality. In cyberspace both text and story constantly "shape shifts." The phenomenology of shape-shifting is similar to the orality mode in its use of images, icons, and symbols that take you where you 'feel' you need to go to reach an understanding, and to present clues to what actions you must take in order to tell you what you need to know. Similar to the orality mode, a cyberspace is tactile, multi-locational, multi-level, iconic and mosaic. In the orality mode images 'speak,' and the 'universe' is animated. In other words, "the archetypes walk around" (Allen,

1997). This has more of a familiar ring to it when one experiences induction into cyberspace than any Western literacy-based narrative.

From a traditional Western literacy perspective the historical context in a virtualized landscape is reduced to a "floating non-time" as the 'real' past fades and disappears into the background. I would propose a different sort of literacy has been called for in order for this induction to occur. Truths and consequences cannot be readily elicited on virtualized landscapes coming from a Western dialectic position. In a virtualized landscape we are crossing many boundaries. This process requires balancing, not resolving; and it involves "not the metaphysics of presence but of perpetual absence" (Fry, 1998).

The computer programmer works with numbers reduced to the logic of binary opposites: simply put, presence or absence, there or not there, one or zero. In Buddhist philosophy, if the method is logical and you do the right computation of using yes and no at the right time you eventually arrive at the one, only, possible truthful outcome. The truth is revealed in real consequences; there or not there. In this context, the computer programmer works out a philosophical debate in the form of logic. So what meanings are to be made when Boolean logic is housed in a computer program that gets played out in a screen with 'all' always all there even when its not, and 2 + 2 = apples? The Western philosophy traditionally separates the Parmemidian truth that "all is one" from the Heraclites truth that "all is flux," The concept of liminaltiy seems to accommodate both categories of truths.

Cyberspace itself is, in fact, absolute in its mathematical language while relative and multiple in its experience. The phenomenology of the simultaneous experience is brought to it by the participant, or 'reader,' so that the sensation created is both relative and subjective. Ironically, with its empirical either/or, 'creating' (there) or 'canceling' (not there) capacity, digital text makes any pretense of a foundational

narrative a distinctly suspect notion. It is a postmodern text in this sense. Postmodern themes are expressed in the writings of MIT computer researcher, psychologist and educator, Shelly Turkle. Turkle believes that in using the computer we are accessing a new way of knowing and, in the process, creating a new ontology-- a new way of Being.

In observing children access digital text Turkle (1995) saw a unilateral self that does not shatter in cycling through cyberspace's many looking glasses. Rather, a singular self disappears into transmuted virtual selves-- "multiple sequential selves"-- as it cycles through virtual worlds. In creating multiple personae we experience leaving the self behind as it were. A 'whole' self becomes a new 'whole' self (rather than bringing different aspects of self into some holistic form of emerging self/self-consciousness). Turkle believes that integrating the experience of multiple sequential virtual selves with the real self will be the task that lies ahead.

The cyclist metaphor as used by Turkle for cyberspace is also found in the Native traditional oral culture but it is 'read' differently. Virtual landscapes many looking glasses are 'read' at a pattern level as a web of multi-dimensional interacting cycles that affect one another. From the orality perspective, in cycling across these boundaries, we are not being anything in particular; that is, with no particular self or identity. In this liminal state there are negotiable and navigational 'fictional' and 'real' world possibilities involving multiple situations, characters and events in life, death, and life-death states. Each situation, event, narrator, or character may call for a different aspect of the self to come forward. Life's patterning is read with different aspects of a self in the ongoing process of becoming a more aware whole self. In this tradition, the language is one of extension and divergence. Nothing gets left behind. We begin where the former left off, not genetically of course, but rather in terms of

what can be called accumulated collective knowledge. Whether real or virtual is not really an issue.

Turkle's description is situated within the Western literacy tradition, and refers to a self changing and developing along a converging single track in the process of becoming something other than what it was. In contrast, if we take into consideration the teachings from the oral tradition, Allen's description refers to a self located at the crux of four divergent directions (north, east, south, west) which are circumscribed by the spiritual universe. In this culture, the self is grounded in a holistic context regardless of where the person might find him or herself located by life's circumstances. Here at the center, wherever that might be, one is permanently positioned in a process of Being, open to change. Allen (1996) explains that:

> Western people think of change as progress, and that is their primary organizing principle-- motivating force and raison d'être-- of modern life. I, as a Native, see change as the fundamental process, as transformation, as ritual, as intrinsic to all of existence, whenever and wherever, in whatever form or style it takes. Transformation. To change someone or something from one state or condition to another. Magic. (Sept. 16 - 20)

Western science fiction writer Arthur C. Clarke has commented that, in this culture, the perception of any sufficiently advanced technology is that it is "indistinguishable from magic." In *2001: A Space Odyssey* , Clarke (1968) has a monolith brings technology (a bone) to apes, eventually leading them to a kind of self-consciousness unbounded by the traditional frameworks of time and space. Will virtualizing social and educational landscapes not only bring a new mode of discourse, but also change the Western literacy mode of consciousness, of Being? And if so, to what?

The border between reality and fiction is becoming more precarious in the Western world. With a virtualized landscape both reader and narrator are positioned to accept the "overlap of worlds" (Atwood, 1989, p. 322) as we come to realize we are all "products of different moments of truth or fiction" (Van Herk 1992, p. 48). In his book *The Skin of Culture* de Kerchove (1995) argues that Western culture is

developing an image-based literacy along the lines of the oral tradition. Compaine (1983) reports that "with reliable voice recognition computers, we could return to such an era of oral literacy" (p. 139). A Western oral generation could conceivably learn to absorb content from speech with greater satisfaction and enjoyment than reading words from a book.

Rushkoff believes that the relationship we are developing with electronic image-based text in the Western world is fundamentally different from text on the page. He tells us that when we are framed by an electronic screen that becomes a window, the magic is in the screen.

CHAPTER FIVE

Bringing Together Liminal States and the Pedagogy of Bricolage

> We experience the world through stories, whomever tells stories of a culture defines the terms and the agenda of human discourse and the common issues we face. (Gerbner, 1989 - 1990)

Western culture's 'ground floor' reality has been challenged by digital technology's capacity to author 'science fiction' as reality. Accessing a self-performance technology with the computer presents Western culture with a way of knowing that is fundamentally different from that of a short decade ago. It raises questions of identity, of Self, of representation, and much more.

Any form of representation can be thought of as literacy (Kress, March 11, 1998). Visual digital culture provides us with multiple forms of representation. As text mode has shifted to digital text, the language of image and sound, and the visual and verbal, have come together. And the pedagogical environment has become one of "multi-modality." Children no longer have a certain number of pages to read; their reading has changed, and their literacy has changed. We have had a language construct, now we have to consider the possibility of a technological construct.

Reading digitized forms of respresentation could be referred to as techno-digital literacy. On and in virtualized landscapes we find the Western mode of dialectic discourse in its rhetorical design is changing. Kress (1998) would say that "Western reading paths;" for example, reading from top to bottom and having the word as the central focus, have changed. In turn, certain principles of communication are changing. The educator must now work with a wide range of communication modes, more often than not, to do with visual images.

Kress (1998, March 11, 1998) argues that educators need to pay particular attention to how we think about distinguishing between the icon that is creatively developed and the image that is controlled. Do we use the technology in such a way that the goal is one of coersion and control, such that it 'cannibalizes' any creative goal? Have we given enough time to become aware and informed of the choices involved? Rooke (1996) points out that few educators have "examined the pedagogical or psychological implications of its [the question of literacy] relationship to the making of children" (p 6). Where, and how, do children socialized and educated on virtualized landscapes fit into the making of children? What sort of "child-hood" is being socially and pedagogically constructed on educational landscapes?

If television has been "the social brain of democracy" then what is the computer? Physicists and mechanical engineer Ursula Franklin reminds us that compared to other some other cultures, Western culture seldom has the opportunity to "leave the house that technology has built" (Franklin, 1990). She asks the first question first; that is, how does the technology serve us. Is it a "prescriptive" technology? What kind of a house is being built, structurally, foundationally, design-wise? Franklin's question is a question about intent. On the professional knowledge landscape this question might be what is the educator's intent in "educating children with technology that connects them to neo-naturalistic forms and virtual reality?" (Kress, March 11, 1998). I would argue that digital techno-literacy needs to be an emerging educational field because it is about a new mode of discourse, a different way of knowing for Western culture. We are not as aware or as clear as we need to be about our intent.

Whether or not this repositioning, or new perspective, brings with it or demands a new mode of consciousness remains to be seen. I think that will depend on what kinds of questions are asked. Searching for, and asking questions about the true representation of a text has meant the literal, historical, and factual material for Western

culture. Searching for true representation in the Native oral tradition has been very different. Allen (1997) speaks about "having the land, we don't have history," and therefore the 'reality' of the terrain is open to a multiplicity of relationship possibilities, mythical or otherwise. All the possibilities for true representation are held within the liminal state. The reality system *is* the liminal state, and according to Allen (1997), its metanarrative "we are here now prepared for community"-- and everyone is alive in "being" together. This sounds very similar to Postman's proposed metanarrative for the stewardship of spaceship earth. But this is precisely not the experience of being in cyberspace, which finishes when the self departs.

A Consideration For Further Research

As technologically driven educational environments become increasingly commonplace, educator's are called upon to revisit the question of literacy with respect to techno-digital literacy, and in particular the oral tradition, to carefully and critically consider that how Western culture constructs the positioning of its children in this new 'reading' process will 'write' its metanarrative of the future.

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